

CONTRACT NO. 68-W9-0051

LI TUNGSTEN GLEN COVE, NEW YORK

Work Assignment No. 025-2L4L

INTERIM REMEDIAL ACTIONS REVISED WORK PLAN

Remedial Planning Activities at Selected Uncontrolled Hazardous Substance Disposal Sites USEPA Region II (NY, NJ, PR, VI)

Malcolm Pirnie, Inc. 102 Corporate Park Drive White Plains, New York 10602

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ARCS II CONTRACT NO. 68-W9-0051

WORK ASSIGNMENT # 025-2L4L

SITE NAME:

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GLEN COVE, NEW YORK

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REVISED WORK PLAN

DECEMBER 1994

CONTRACTOR QA/QC SIGN-OFF

Malcolm Pirnie, Inc., has reviewed this document in accordance with the contractor's ARCS II Quality Assurance Procedures Manual SOP (MP-PMOQA-006-12/90, Revision 1) and is submitting it to USEPA, Region II under Work Assignment No. 025-2LAL and Contract No. 68-W9-0051.

This document has not been approved by USEPA Region II and is not intended for release to the public.

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LI TUNGSTEN SITE GLEN COVE, NEW YORK WORK ASSIGNMENT #025-2L4L

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1.0 INTRODUCTION

1.1 OVERVIEW

The Li Tungsten Corporation (Li Tungsten) site is an inactive 26-acre site located at 63 Herb Hill Road in Glen Cove, Nassau County, New York (USEPA ID# NYD986882660). A general site plan is shown in Figure 1-1. From the early 1940's until approximately 1985, tungsten ores or concentrates, imported primarily from mainland China, South America, and Canada, were smelted at this facility for the production of tungsten carbide powder, tungsten wire, and welding rods (NUS, 1989; 1990). In 1985 the company filed for bankruptcy and the facility ceased operation.

Various site investigation activities were conducted at the site between 1987 and 1990 by the Nassau County Department of Health (NCDOH), the New York State Department of Environmental Conservation (NYSDEC), the potentially responsible parties (PRPs), and the United States Environmental Protection Agency (USEPA). Under the terms of an Administrative Order on Consent (AOC), a Time Critical Removal Action (HART, 1990) was completed by the potentially responsible parties (PRPs) to remove hazardous and radioactive materials that constituted an immediate threat to public health or the environment.

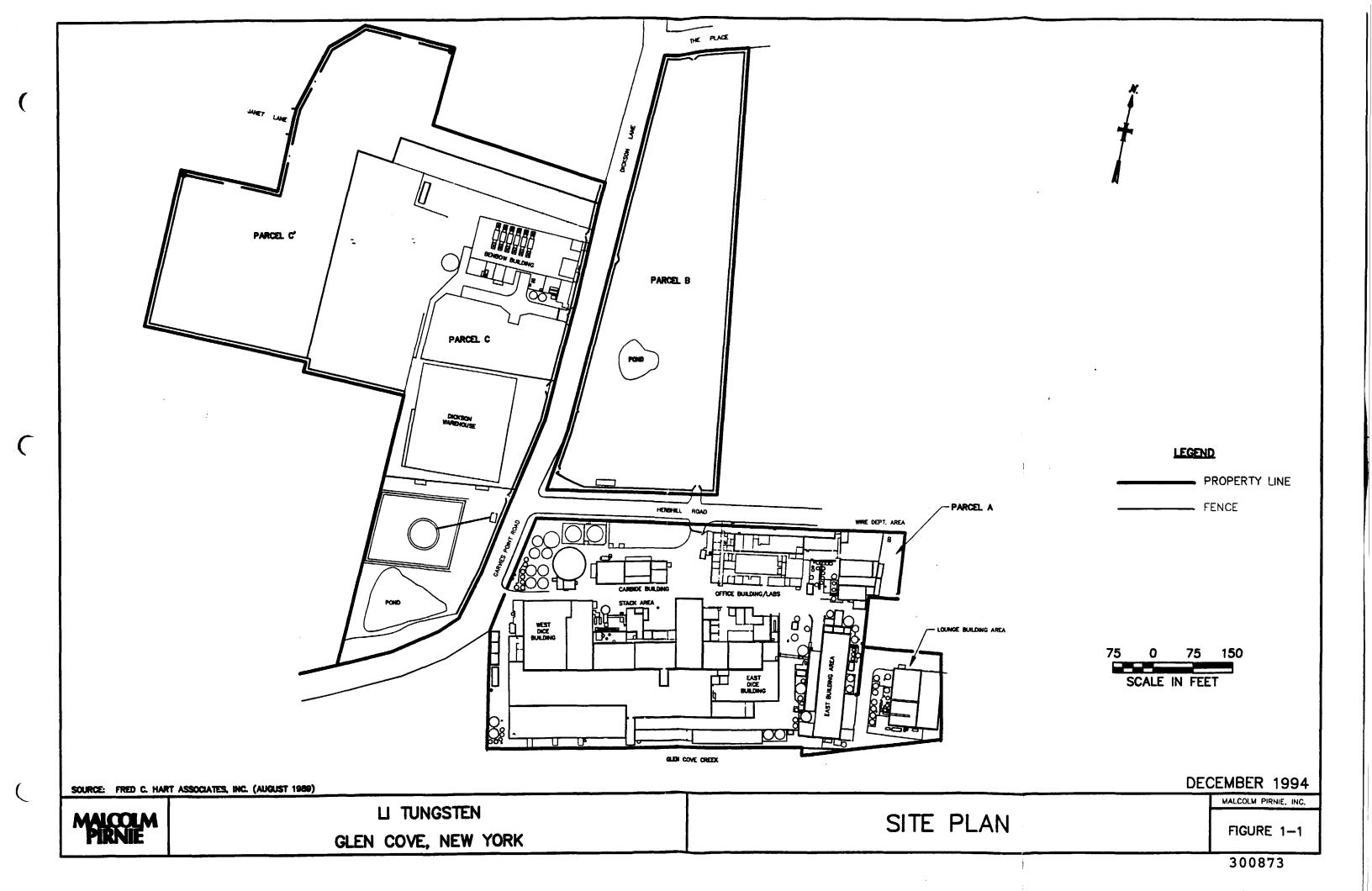
In July 1991 the site was proposed for inclusion on the National Priorities List (NPL) and in October 1992 the site was placed on the NPL. A Work Plan to conduct a Remedial Investigation/Feasibility Study (RI/FS) (Malcolm Pirnie, 1993) was developed and approved by the USEPA in March 1993.

1.2 NEED FOR INTERIM REMEDIAL ACTIONS

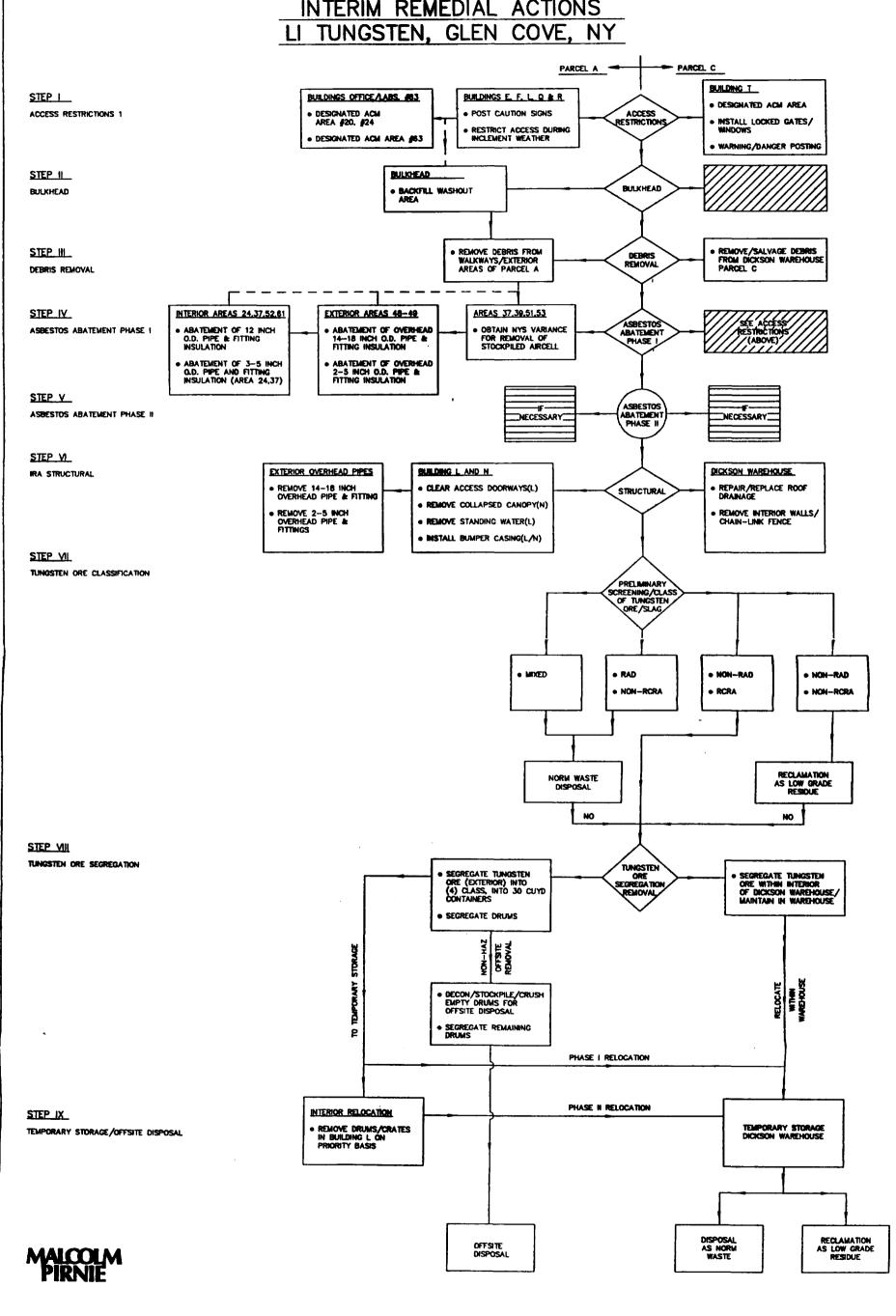
The need for interim remedial actions (IRAs) to address physical safety hazards at the site were identified in the RI/FS Work Plan (Malcolm Pirnie, 1993). Several preliminary steps were proposed in the RI/FS Work Plan to further evaluate site conditions in developing this IRA Work Plan. In April and May of 1994 a multi-disciplinary team including a health and safety specialist, a health physicist, a structural engineer, a construction manager, NYS certified asbestos inspectors, and the Site Manager made several visits to the site. Activities that were conducted by this team to develop this IRA Work Plan included the following:

- Evaluate the structural integrity of the buildings on Parcels A and C
- Estimate the quantity of tungsten ore/slag and develop a plan for removal and/or temporary storage
- Perform surface radiation measurements of materials recommended for disposal or relocation
- Delineate and sample material suspected of containing asbestos
- Inspect and evaluate bulkhead area along Glen Cove Creek

A conceptual flow-chart for the recommended interim remedial actions is presented in Figure 1-2; a detailed discussion is presented in Section 2.



CONCEPTUAL FLOW CHART FOR INTERIM REMEDIAL ACTIONS



2.0 INTERIM REMEDIAL ACTIONS

2.1 DEBRIS

A majority of the walkways, driveways, and areas adjacent to and inside many of the buildings throughout Parcel A are strewn with a variety of general debris and trash (e.g., scrap lumber, asphalt roof tiles, household garbage, appliances, mattresses, etc.; Refer to photographs #39-40). Trespassers entering the site before 24-hour security was instituted, left much of this material. The debris represents a physical safety hazard (e.g., slip, trip and fall) and blocks access to many areas where other interim remedial actions (e.g., removal of the tungsten ore/slag) are recommended or where RI/FS activities are planned.

The first remedial action that is recommended includes the removal of much of the debris on Parcel A. Some of the debris in the buildings could be left in-place where it would not affect other IRA or RI/FS activities. This material is not believed to be hazardous, so it could be hauled away to a local sanitary landfill by a local or municipal refuse company after screening for radioactive contamination on surfaces of debris. Transportation and disposal of any portion of the debris that is determined to be hazardous will be handled in accordance with 40 CFR Parts 262 and 263.

The screening criteria that will be used have been taken from standards promulgated by the U.S. Nuclear Regulatory Commission (NRC) and adopted by the New York State Department of Labor (12 NYCRR Part 38, Ionizing Radiation Protection) which set limits on the levels of surface radioactivity on materials which may released to the general public for unrestricted use. For example, there may be 1,000 dpm per 100 cm² (average) and 3,000 dpm per 100 cm² (maximum) total activity and 200 dpm per 100 cm² removable activity from ²²Th. Total activity levels of debris will be screened with an alpha scintillation detector coupled to a Ludlum Model 12 ratemeter. If surfaces are found to contain levels of activity that are greater than background but less than the total surface activity criteria, wipe samples will be collected and counted in an alpha sample counter coupled to a Ludlum Model 2221 ratemeter/scaler to quantify removable surface activity.

Debris removal is also recommended from the Dickson Warehouse on Parcel C. Removal of this material is necessary before the building could be used for temporary storage of much of the tungsten ore/slag that is present on Parcel A. Additional details on the IRAs recommended for the tungsten ore/slag are discussed in Section 2.3.

Implementation of this remedial action would be straightforward. Bids would be solicited from four or five local companies. A pre-bid site visit is recommended. Once the subcontractor is selected, it is estimated that approximately two weeks would be necessary to complete the debris removal.

2.2 STRUCTURE OF BUILDINGS

2.2.1 Overview

A walk-through inspection was performed of the buildings on Parcels A and C to evaluate the structural condition. Areas that are NOT considered to be structurally sound or areas

that require remedial action work are described in detail below and shown on Figures 2-1 and 2-2. Each building or building segment shown on Figures 2-1 and 2-2 has been assigned a letter designation (e.g., A, B, C, etc.). Results of the structural inspection including building material (roof, walls and floor) and condition are summarized in Table 2-1.

2.2.2 Recommendations

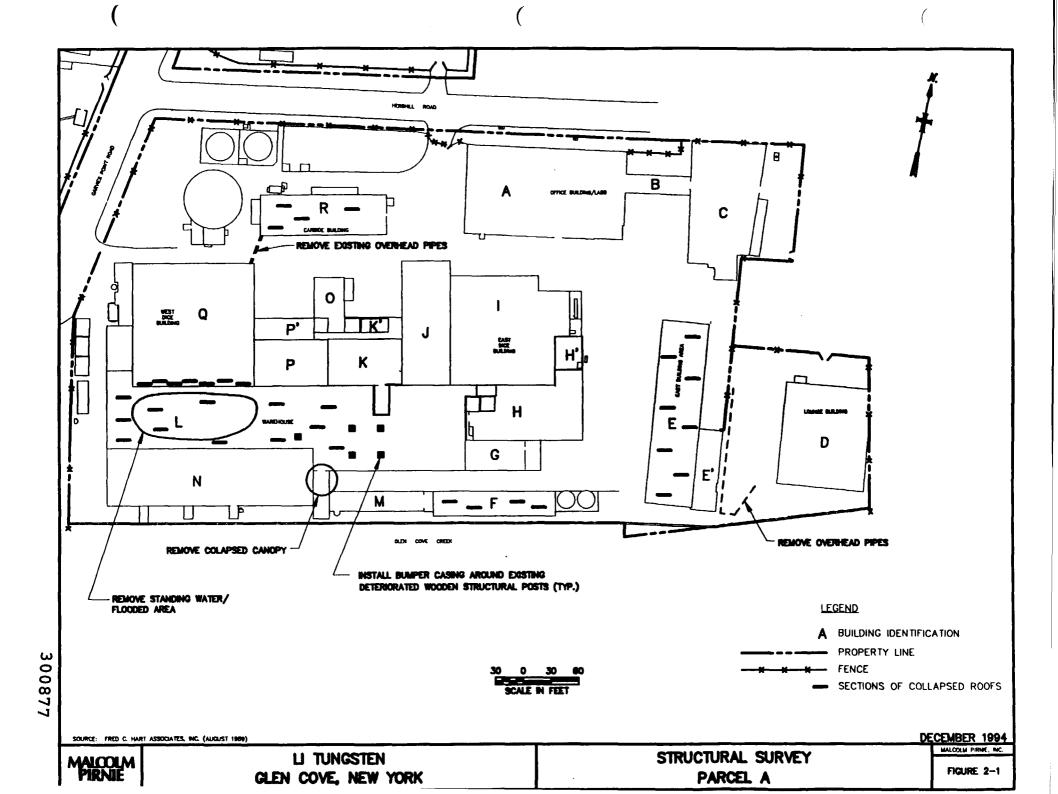
Overall it does not appear that any building on site is in immediate danger of collapse, although portions of some buildings, however, may be dangerous to enter. Demolition is not necessary at this time, since either (1) work in and around these areas can be completed with precautions, or (2) entry to these buildings is not necessary during either other IRA or RI/FS activities. The buildings or areas that fall into one of these categories include:

- Building T (Reduction Building or Benbow Building) on Parcel C contains composite wood ceiling panels that are deteriorating due to the poor condition of the roof (Refer to photograph #20). As the composite wood panels become saturated from infiltrating rain water or snow melt, portions of the panels are falling to the floor of the building. We recommend restricting access by placing a locked gate at each of the building entrances and boarding up all windows.
- Portions of buildings E, F, J, L, Q and R on Parcel A have collapsed roofs, walls and canopies (Refer to photograph #29). Recommended precautions in these buildings include barring entry during inclement weather (e.g., rain/snow, thunderstorms, high winds).

Portions of other buildings or structures will require removal activities or installation of protective structures. In Buildings L and N (Parcel A) the following steps are required to safely remove the drums/crates of tungsten ore/slag:

- Clear access doorways along the south wall of Building L
- Remove the collapsed canopy (Building N) (Photograph #27)
- Pump water from floor of Building L (Photograph #28)
- Install temporary bumper casing (painted in fluorescent color) on the wooden structural posts prior to entering the area with fork-lift equipment to remove drums/crates of tungsten ore/slag.

Water from the floor of Building L as well as other building locations will be pumped into a holding tank. The water in the holding tank will then be sampled for chemical (TCLP parameters and RCRA characteristics) and radiological (200Th, 202Th, 202Th, 202TRa, 202TRa, and 203TU) parameters. The disposal method for the water will be determined based on the results of the sampling. The pumped water, if hazardous, will be managed in accordance with 40 CFR Part 265, Subparts I and J (where applicable). This water is the only liquid that will be handled during the IRA activities. Drums that contained liquid wastes were removed from the site during the Time Critical Removal Action (HART, 1990).



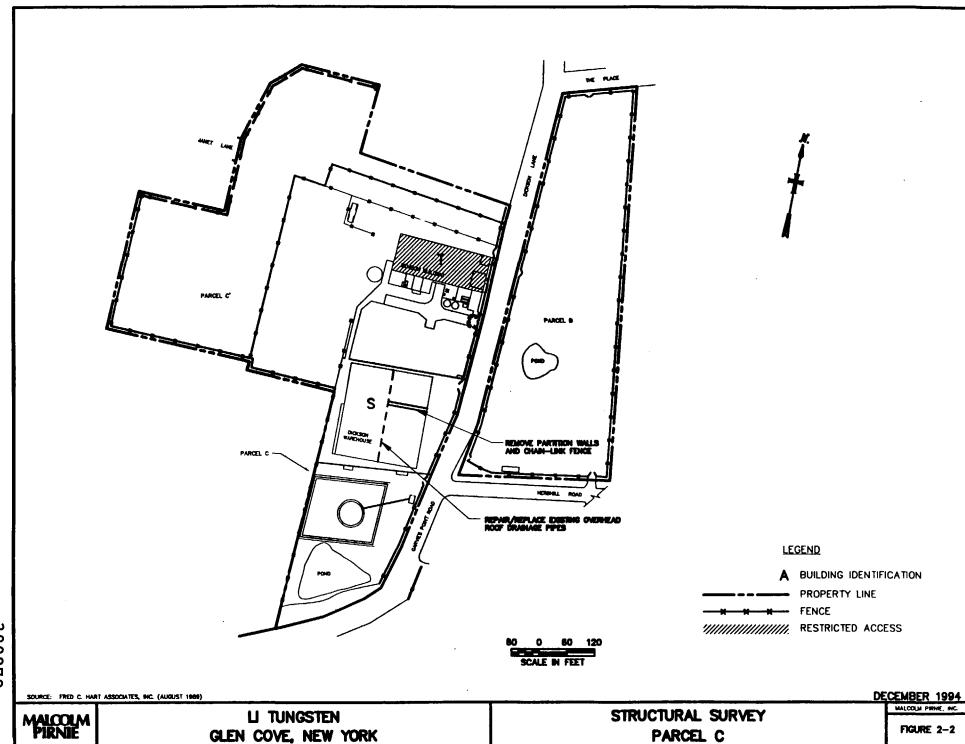


Table 2-1. Inventory of Buildings

| Building | | Bu | ilding Materials (Ty | pe) | Building Conditions | | | |
|----------|----------------------|----------------|--|----------|---------------------|-----------------|---------------|---|
| Number | Building Name | Roof | Walls | Floor | Roof | Walls | Floor | Remarks |
| | | | | | | | | |
| Ā | Offices & Laboratory | Timber frame | Timber/Stocco | Wood | Roof leaking | OK | Soft in areas | Structure will continue to deteriorate due to water damag |
| | • | | Shingle | | frame Temp OK | | | Floors are soft in areas indicating water damage |
| В | Connecting Structure | Plastic roof, | Masonry | Concrete | OK | OK | OK | |
| | | Steel frame | <u> </u> | | | | | |
| C | | Timber frame | Metal panel | Concrete | Roof leaking | ОК | OK | |
| | | | | | frame OK | | | |
| D | Loung Building | Wood roof | Brick | Concrete | ОК | OK | OK | |
| | | steel frame | | | | | | |
| E | East Building | Timber frame | Brick Frnt & side | Concrete | Roof leaking | Temporary | OK | Section of wall fell |
| | | | Metal Panel back | | frame temp OK | stable | | |
| E. | Attachment Building | Timber frame | Masonry | Concrete | Roof leaking | OK | OK | |
| | | | | | frame temp OK | | | |
| F | Fire Brick Lining & | Steel frame | Siding | Concrete | Frame OK | OK | OK | One bay roof collapsed |
| | Machine storage | | <u> </u> | | | | | |
| G | Parts storage | Timber frame | Masonry | Concrete | Temporary OK | Crack & Patches | OK | |
| | warehouse | | | | | OK | | |
| Н | | Timber frame | Metal panel | Concrete | Roof leaking | ок | | |
| | | | Timber frame | | temp OK | | | |
| H. | Attachment Building | Timber frame | Masonry | Concrete | Roof leaking | OK | OK | |
| | | | | | frame temp OK | ļ | | |
| I | East Dice Building | Bowsting roof | Metal panel | Concrete | frame OK | OK | OK | |
| | | Timber frame | | | ļ | | | |
| I. | Attachment Building | Flat roof | Masonry | Concrete | Roof leaking | ОК | OK | |
| | | Timber frame | ļ.———— | | frame temp OK | | | |
| J | | Bowsting frame | Metal Panel | Concrete | Roof leaking | Cracked but OK | OK | |
| | <u> </u> | | Masonry | | frame OK | | | |
| K | | Bowsting roof | Metal panel | Concrete | Roof leaking | OK | OK | |
| | | Timber trusses | | | frame temp OK | | | |
| K' | Attachment Building | Timber frame | Masonry | Concrete | Roof leaking | OK | OK | |
| - · | | | | | frame temp OK | ļ. <u></u> | | |
| L | Warehouse | Timber frame | Masonry | Concrete | Roof leaking | OK | Need drainage | Entrance canopy and one section of roof collasped must |
| ····· | ll | Steel shore | | | frame temp OK | | OK | be removed |
| L' | Attachment Building | Timber frame | Metal siding | Concrete | Roof leaking | OK | OK | |
| | | | | | frame temp OK | L | | |

Table 2-1. Inventory of Buildings

| Building Name | Roof | | | 1 | Building Conditions | | | | |
|---------------------|--|--|---|--|---|--|---|--|--|
| | 1001 | Walls | Floor | Roof | Walls | Floor | Remarks | | |
| · | | | | | | | | | |
| | Wood roof | Masonry | Concrete | OK | OK | OK | | | |
| | Steel frame | | | | | | | | |
| | Wood roof | Masonry | Concrete | OK | OK | OK | | | |
| | Steel frame | | | | | | | | |
| Attachment Building | Flat roof | Masonry | Concrete | Roof leaking | OK | OK | | | |
| | Metal frame | | | frame temp OK | | | _ | | |
| | Bowsting Truss | Metal panel | Concrete | Roof leaking | OK | OK | | | |
| | Timber frame | | | frame temp OK | <u> </u> | | | | |
| Attachment Building | Timber frame | Masonry | Concrete | Roof leaking | OK | OK | | | |
| | | | | frame temp OK | <u> </u> | | | | |
| West Dice Building | Bowsting Truss | Metal panel | Concrete | Roof leaking | OK | OK | Some roof areas falling down | | |
| | Timber frame | Masonry wall | | frame OK | | | | | |
| Attachment Building | Timber frame | Metal siding | Concrete | Roof leaking | OK | OK | | | |
| | | | | frame temp OK | | | | | |
| Carbide Building | Pitch roof | Masonry | Concrete | frame OK | ОК | OK | Outside piping and supports need removal | | |
| | Steel frame | | | 1 | 1 | | | | |
| New Warehouse | Metal roof, Steel | Metal panel, Steel | Concrete | OK | OK | OK | This building in good condition. | | |
| | Bowsting Truss | frame & Masonry | | | | | Needs repair of roof drains. | | |
| Reduction Building | Compsite wood | Metal panel, Steel | Concrete | Roof leaking | Masonry cracked | OK | Composite wood plank falling | | |
| | Planking, Steel frame | frame Masonry | | Plank deteriorating | but OK | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | 1 | | | | | |
| | Attachment Building West Dice Building Attachment Building Carbide Building New Warehouse Reduction Building | Steel frame Wood roof Steel frame Attachment Building Flat roof Metal frame Bowsting Truss Timber frame Attachment Building Timber frame Attachment Building Timber frame Carbide Building Timber frame Timber frame Timber frame Attachment Building Timber frame Attachment Building Timber frame Attachment Building Timber frame Attachment Building Timber frame Carbide Building Pitch roof Steel frame Metal roof, Steel Bowsting Truss Reduction Building Compsite wood Planking, Steel frame | Steel frame Wood roof Steel frame Attachment Building Flat roof Metal frame Bowsting Truss Timber frame Attachment Building Timber frame Metal panel Timber frame Metal panel Masonry Metal panel Masonry Metal panel Masonry wall Attachment Building Timber frame Metal siding Carbide Building Pitch roof Steel frame New Warehouse Metal roof, Steel Bowsting Truss frame & Masonry Metal panel, Steel Frame & Masonry Reduction Building Compsite wood Planking, Steel frame Frame Masonry | Steel frame Wood roof Steel frame Attachment Building Flat roof Metal frame Bowsting Truss Timber frame Attachment Building Timber frame Metal panel Concrete West Dice Building Bowsting Truss Timber frame Masonry Concrete West Dice Building Timber frame Masonry Concrete Carbide Building Timber frame Metal siding Concrete Carbide Building Pitch roof Steel frame New Warehouse Metal roof, Steel Bowsting Truss Metal panel Masonry Concrete Concrete Masonry Concrete Concrete Metal panel, Steel Frame Metal panel, Steel Concrete Concrete | Steel frame Wood roof Steel frame Attachment Building Flat roof Metal frame Bowsting Truss Timber frame Masonry Metal panel Timber frame Masonry Metal panel Timber frame Masonry Concrete Roof leaking frame temp OK Attachment Building Timber frame Masonry West Dice Building Timber frame Masonry Metal panel Timber frame Masonry wall Attachment Building Timber frame Metal siding Concrete Roof leaking frame OK Attachment Building Timber frame Metal siding Concrete Roof leaking frame OK Attachment Building Pitch roof Steel frame New Warehouse Metal roof, Steel Bowsting Truss Metal panel, Steel frame & Masonry Reduction Building Compsite wood Planking, Steel frame Metal panel, Steel frame Masonry Metal panel, Steel frame Masonry Plank deteriorating | Steel frame Wood roof Steel frame Masonry Concrete OK OK OK Attachment Building Flat roof Metal frame Bowsting Truss Timber frame Masonry Concrete Roof leaking frame temp OK Timber frame Masonry Concrete Roof leaking frame temp OK Attachment Building Timber frame Masonry Concrete Roof leaking frame temp OK Concrete Roof leaking frame OK Attachment Building Timber frame Metal panel Masonry wall Attachment Building Timber frame Metal siding Concrete Roof leaking frame OK Concrete Roof leaking frame OK Concrete Roof leaking frame temp OK Concrete Roof leaking frame OK OK Concrete Steel frame New Warehouse Metal roof, Steel Bowsting Truss Metal panel, Steel Frame & Masonry Reduction Building Compsite wood Planking, Steel frame Masonry Metal panel, Steel Frame Masonry Plank deteriorating Plank deteriorating Masonry cracked but OK | Steel frame Wood roof Steel frame Masonry Concrete OK OK OK OK OK OK Attachment Building Flat roof Metal frame Bowsting Truss Timber frame Masonry Metal panel Concrete Roof leaking frame temp OK Attachment Building Timber frame Masonry Metal panel Concrete Roof leaking frame temp OK Attachment Building Bowsting Truss Timber frame Masonry Metal panel Masonry wall Attachment Building Timber frame Metal siding Concrete Roof leaking frame OK Attachment Building Timber frame Metal siding Concrete Roof leaking frame OK Attachment Building Timber frame Metal siding Concrete Roof leaking frame temp OK OK OK OK Carbide Building Pitch roof Steel frame New Warehouse Metal roof, Steel Bowsting Truss Reduction Building Compsite wood Planking, Steel frame frame Masonry Frame Masonry Plank deteriorating | | |

g:\8001202\irawplan\table2-1.wk1

The Dickson Warehouse (Parcel C) is a relatively new building and was determined to be structurally sound (Refer to photograph #19). Some preparatory work is required before the Dickson Warehouse can be used for temporary storage area of the tungsten ore/slag described below in Section 2.3, .

- Initially, remove all non-hazardous materials from the building including empty drums, crates, wooden pallets, carbide powder, and potentially salvageable items such as ovens, burners.
- Repair or replace the roof drainage pipes to maintain dry storage.
- Remove two temporary interior walls located at the north-east section of the warehouse and a chain-link fence enclosure.

The remaining interim remedial action is to remove hanging pipe in those areas shown on Figure 2-1 (Parcel A, Buildings E', Q, and R) where overhead clearance will be required for access by drilling equipment (Refer to photographs #17, 34).

2.3 BULKHEAD

2.3.1 Results of Inspection

Two washout areas were observed in the ground surface immediately behind the sheetpile bulkhead along the southeastern portion of Parcel A. This has resulted in two large open holes immediately behind the bulkhead. The sheetpile is partially corroded, thereby creating the potential for a release of contaminants from the site into Glen Cove Creek. In addition, the washout areas represent a physical safety hazard to site workers.

2.3.2 Recommendations

The two holes behind the bulkhead will be backfilled to minimize both erosion and the potential release of contaminants to the Creek. Access to this area along the bulkhead is limited, thereby making the placement of regular dry construction fill very difficult. The holes will first be lined with 20-mil plastic sheeting or possibly a geotextile fabric. The lined holes could then filled by pumping in ready mixed cement with fly ash (e.g. flowable fill). It may be necessary to introduce the flowable fill in separate lifts to minimize the horizontal tension placed on the bulkhead during the curing process. This material is readily available from local ready mixed concrete producers and can be delivered to the site in conventional cement trucks.

2.4 TUNGSTEN ORE

2.4.1 Overview

It is estimated that approximately 8,100 tons (4,000 cubic yards) of processed or partially processed tungsten ore/slag remains aboveground on site. The ore is present in drums, wooden crates and piles both inside and outside the buildings and contains heavy metals and radioactive isotopes of uranium, thorium and radium (Refer to photographs #'s 35-38).

Many of the drums and crates located outside are weathered and have corroded or deteriorated to a point where the contents have spilled onto the ground (Refer to photograph #33). In other areas, the drums have been overstacked and have become very unstable due to deterioration and corrosion.

In many areas the drums prohibit or limit safe passage by site visitors or workers. RI/FS field activities are proposed in many of the areas where the material is present. In other areas the material does not allow access by drilling rigs or other work vehicles.

2.4.2 Results of Inspection

The purpose of the visual inspection and preliminary evaluation was to estimate the volume of processed and partially processed ore/slag. The survey was conducted for both interior (i.e. inside existing buildings) and exterior perimeter locations of Parcels A and C. No attempt was made at this time to classify the material for its potential reclamation as a source of tungsten or other minerals.

PARCEL A - Exterior Locations

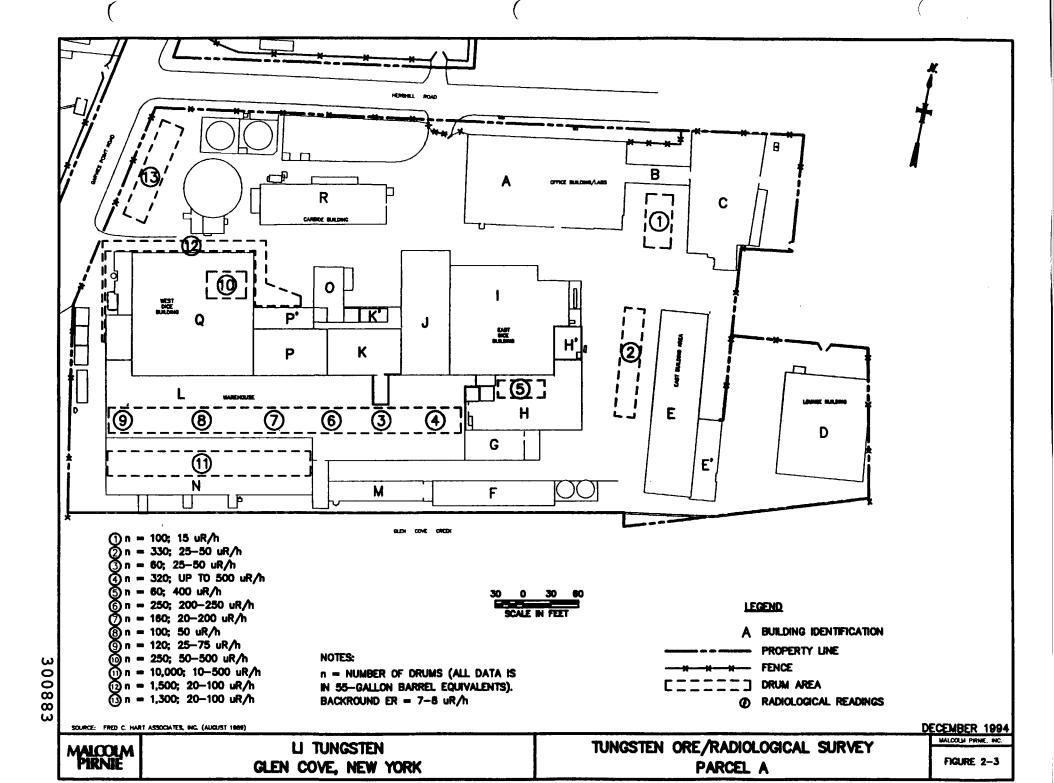
Processed or partially processed ore or slag is scattered throughout the exterior perimeter walkway locations and adjacent to many of the buildings. The material was primarily found in various sized drums and wooden crates. In general, a majority of the drums and crates have corroded or deteriorated and are scattered throughout the site. There are, however, five main locations where the majority of ore is stockpiled as shown in Figure 2-3. The five areas are listed below:

- Along the west and north perimeter of Building Q (West Dice Building) (Refer to photograph #36)
- Adjacent to the Stack Area, north of Buildings P and K (Refer to photograph #35)
- South of Building B and Adjacent to Buildings A and C (Refer to photograph #31)
- Outside of Building E (East Building) along the east perimeter wall. (Refer to photograph #37)
- Along the west site perimeter adjacent to Garvies Point Road (Refer to photograph #33)

It is estimated that there is approximately 1,700 tons (800 cubic yards) of ore/slag at these five locations.

PARCEL A - Interior Locations

Drums are primarily located in the Warehouse Area (Building L), Building N and H (see Figure 2-3). The majority of the drums (estimated 75%) inside of the buildings are generally in fair to good condition, stacked on wooden pallets approximately 6-12 feet high. The condition of the drums can be correlated to the structural condition of the existing



buildings. Drums in good condition are generally staged in the east section of Building L. Drums in deteriorated condition are typically found in the west section of Building L, where partial roof collapse and significant flooding occurs on a periodic basis.

There are approximately 5,900 tons (2,900 cubic yards) of material located in this area.

PARCEL C - Exterior Locations

Approximately 315 tons (150 cubic yards) of tungsten ore/slag exists along the south and west walls of the Dickson Warehouse (Figure 2-4). In addition, there is non-hazardous debris scattered outside on the east side of the Dickson Warehouse.

PARCEL C - Interior Locations

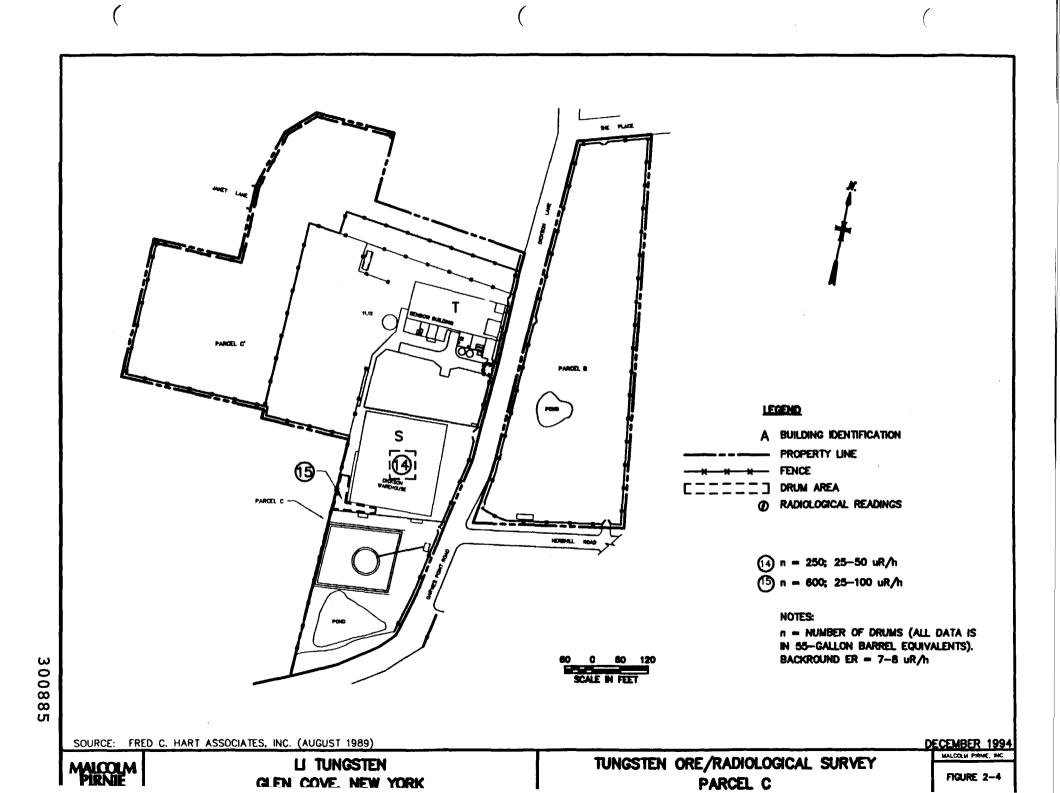
Additional amounts of tungsten ore, approximately 130 tons (60 cubic yards), are located within the west section of the Dickson Warehouse. The majority of material within the Dickson Warehouse appears to be non-hazardous. In addition, empty drums are stockpiled in the north and west sections of the Dickson Warehouse.

2.4.3 Summary

The final disposition of the tungsten ore will likely be determined by its chemical and radiological characteristics, or its radiological characteristics alone. For example, if the material is classified as a RCRA hazardous waste, it could eliminate the possibility of reclamation as a low-grade residue. Overall, four potential categories exist:

- non-radiological (surface exposure rates less than 20 μ R/h + background and/or less than 5 pCi/g radium and/or thorium) and non-RCRA waste
- non-radiological (surface exposure rates less than 20 μ R/h + background and/or less than 5 pCi/g radium and/or thorium) and RCRA waste
- radiological waste (surface exposure rates greater than 20 μ R/h + background and/or greater than 5 pCi/g radium and/or thorium) and non-RCRA
- mixed waste (both RCRA and radiological). NOTE: If any materials meet both of these criteria, it may be necessary to analyze for concentration of radiological components. Most likely, if the material has thorium or radium concentrations in excess of 5 pCi/g, it will need to be disposed of as commingled naturally occurring radioactive material (NORM) and RCRA waste. The hazardous component of this waste would be managed in accordance with 40 CFR Part 261.10, Subpart B.

At other CERCLA sites, the USEPA has found the uranium mill tailings standards (40 CFR Part 192) to be appropriate and relevant to the cleanup of soil with NORM waste. In 40 CFR 192, thorium and radium concentrations are limited to 5 pCi/g in the surface layer (15 cm) and 15 pCi/g in subsurface layers (average) over surface areas of 100 m². Other appropriate and relevant standards would be the general public annual limit of 100



mrem which was promulgated by NRC in the recently revised 10 CFR Part 20 and by New York State Department of Labor in Code Rule 38. At upper limits of 5 pCi/g and 20 μ R/h above background surface exposure rate, the 100 mrem annual limit for total effective dose equivalent should not be exceeded.

A sampling and analytical program, therefore, is proposed for the tungsten ore/slag prior to consolidation of the drums and crates into roll-off containers (see discussion below). The purpose of the sampling is to provide a preliminary analytical screening for classification of the ore/slag. It is estimated that up to 30 samples will be collected and analyzed for three of the four RCRA characteristics (ignitability, corrosivity, reactivity, TCLP parameters). Analytical testing will be performed as described in the USEPA's manual entitled Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). Samples of the ore/slag selected for analysis will be based on field instrumentation readings and visual similarities. Field observations and instrument measurements have confirmed that the ore/slag material exhibits variations in color, texture, and radioactivity level. Several samples (e.g., three or four) of each type of ore/slag will be collected for RCRA characteristic analysis. A total of 30 samples has been assumed, however, the actual number of samples required will be determined in the field.

Radiological classification can be determined based on surface exposure rate measurements. Screening based on the exposure rate will be performed with a gamma scintillation detector (NaI) coupled to a Ludlum Model 12 ratemeter. Data generated during the Time Critical Removal Action are useful to the extent that the data identify individual concentrations of radiological constituents present and the range of exposure rates that have been measured. The process of segregating and restaging, however, cannot be based on these data because it is not specific to the material being handled. Monitoring and screening must be performed as the ore/slag is being characterized and segregated.

The tungsten ore/slag is primarily contaminated with NORM. Specifically, these include thorium series radionuclides and, to a lessor extent, uranium series radionuclides. These radionuclides are not regulated under the Atomic Energy Act of 1954 and therefore are not of the kind of waste typically referred to as low level radioactive waste.

While access to the three commercial low-level radioactive waste disposal facilities located in the United States has been restricted over the past few years due to provisions set forth in the Low Level Radioactive Waste Policy Act of 1980 and amendments, NORM waste disposal has not been similarly affected. In 1988, Envirocare of Utah, Inc., became the country's first licensed NORM disposal facility. Since that time, large volumes of NORM waste excavated from several CERCLA sites (including some sites located in USEPA Region II) have been sent to Envirocare for disposal. Recently, Envirocare has been licensed to accept some NORM wastes which are also commingled with materials classified as RCRA wastes.

Before accepting the ore/slag for disposal as NORM waste, the receiving facility will require quantification of NORM. We propose to analyze the samples utilizing a gamma spectroscopy system in a counting facility which will be established on site during the IRA activities. This type of system would consist of a Germanium detector, multi-channel analyzer (MCA), lead shield, and other components. It is unclear at this time if a lease or purchase of the equipment would be most cost effective, however, this determination will be performed before a revised cost estimate is prepared and submitted. In the event that

a system could not be set up at the site, samples will be collected and sent off-site to a radiological laboratory for analyses. The specific number of samples for this type of radiological analysis will be determined in consultation with the disposal facility.

2.4.4 Recommendations

Generally, the proposed IRAs for the tungsten ore/slag involve the following steps:

- Sampling and surface exposure measurements to determine RCRA hazardous waste classification and radiological waste classification
- Based on sampling results, segregate for off-site disposal and mineral reclamation
- Consolidate tungsten ore/slag and relocate to Dickson Warehouse for temporary storage until disposal or reclamation options finalized

Once the Dickson Warehouse is ready to be used as a temporary storage facility, work could then proceed on consolidating the tungsten ore/slag on a priority basis because our preliminary estimate is that all of the ore/slag onsite will not fit into the Dickson Warehouse. Storage of containers in the Dickson Warehouse would be consistent with 40 CFR Part 265, Subpart I.

- Tungsten ore/slag contained within partially deteriorated drums or stockpiled material along the five (5) main exterior perimeter areas of Parcel A will be consolidated into 30 cubic yard roll-off containers. The roll-off containers may be filled with a front-end loader. Deteriorated drums can be segregated and stockpiled for decontamination and crushing prior to off-site disposal. Roll-off containers would then be loaded onto flat-bed trucks and transported to the Dickson Warehouse on Parcel C.
- At the completion this initial relocation phase, the second relocation phase is designed to move the drums and crates in the deteriorated/flooded sections of Building L. The operational sequence includes removal of drums and crates with fork-lifts capable of lifting existing pallets of drums (with attachments such as drum grappler arms). The priority and sequence of operations for drum relocation operation includes the following:
 - Orums and crates located within the flooded section or structurally unsound building (west section of Building L) will be moved first to the existing openings along the south wall of Building L and lifted onto flat-bed trucks staged in the Alley between Building M and L.
 - Relocation operations will continue toward the east sections of Building L until the Dickson Warehouse is full to capacity. All of the tungsten ore/slag that cannot fit into the Dickson Warehouse, will be consolidated into a dry area within Building L for temporary storage.

The material will be enclosed with fencing and clearly posted as a restricted access area until a final disposal alternative is selected.

2.5 ASBESTOS SURVEY AND ASBESTOS HAZARD EVALUATION

2.5.1 Overview

An asbestos survey and asbestos hazard evaluation was conducted to identify, through visual inspection and bulk sampling), friable and non-friable asbestos containing materials (ACM) in areas where IRA or RI/FS activities may occur. The focus of the survey included interior building areas and exterior perimeter locations. Based upon these findings and evaluation, asbestos abatement is recommended in several areas.

2.5.2 Description of Survey Areas

To identify specific sampling locations, the existing buildings and exterior perimeter areas within Parcels A and C were further subdivided into 74 areas (labeled 1-74 on Sheets 1 and 2). At this time, Parcels B and C' were not included, since visual observations indicate suspect ACM is not present in these areas.

Parcel A

The Parcel A asbestos survey included the interior of buildings and exterior perimeter area locations labeled 1 - 67, 72, 73, and 74. The buildings surveyed for suspect ACM and the corresponding area I.D.'s include the following:

| • | Offices and Labs Building | (Areas 1-35, 37) |
|---|--------------------------------|-------------------------------|
| • | Wire Department Plant Building | (Areas 38-39, 41, 42, and 46) |
| • | Lounge Building | (Areas 46-48) |
| • | East Building | (Areas 43-45, and 49) |
| • | East and West Dice Building | (Areas 48, 50, 51, 53-63) |
| • | Warehouse Building | (Area 52, 72, 74) |
| • | Carbide Building | (Areas 64-67) |
| • | Miscellaneous Exterior Area | (Area 36) |

Parcel C

The Parcel C asbestos survey included the following interior and exterior locations labeled 68-71 as follows:

| • | Dickson Warehouse | (Area 69) |
|---|--------------------------------------|-------------------|
| • | BenBow Building (Reduction Building) | (Area 70) |
| • | Miscellaneous Exterior Areas | (Areas 68 and 71) |

Sampling was conducted in the areas described above for Parcels A and C locations (Refer to Sheet 1 and Sheet 2) in accordance with the procedures described in the USEPA's "Guidance for Controlling Asbestos Containing Materials in Buildings" and protocols described in the Asbestos Hazard Emergency Response Act (AHERA) 40 CFR 763.86. Analytical results are presented in Appendix A.

A summary of samples collected and the percent asbestos detected is provided in Table 2-2. Samples found to contain more than one percent asbestos are considered ACM under federal and state regulations. Sample and photograph locations are indicated on Sheets 1 and 2. Photographs are intended to give general information about the building spaces, typical suspect material sampled, and general exterior perimeter areas that were surveyed. Photographs are presented in Appendix B.

2.5.3 Building Descriptions and ACM Results

Parcel A

Office and Lab Building - primarily a one-story, 17,500 square foot building. The building is wood with a timber frame roof. The facade is sprayed stucco with shingle siding. There is a partial second-floor (30 feet x 30 feet) and a sub-basement which contains the boilers and former heating systems. ACM confirmed from bulk sampling includes pipe and pipe fitting insulation, water tank insulation, aircell insulation debris, transite, and floor tiles.

<u>Wire Plant</u> - a 6,000 square foot building. The construction of the building is concrete and timber frame. The walls are metal panel. ACM materials confirmed include pipe insulation (3 inch O.D.), aircell insulation debris, and transite roofing.

Lounge Building - a 10,400 square foot building. The construction of the building is concrete and steel frame. The building has a wood roof and brick walls. The results of the survey indicate there is no ACM present in this building.

East Building - a concrete and timber frame 10,000 square foot building. The results of bulk sampling indicate there is over 10,000 feet of non-friable ACM 12 inch x 12 inch floor tiles. There is also insulation on various sizes of pipe, however samples were not obtainable due to flooding in the building at the time of the survey.

Dice Building - a 56,000 square foot building. The building is concrete and timber frame (bow-sting roof) construction with metal panel walls. The asbestos survey revealed significant quantities of ACM pipe insulation (12 inch O.D.), pipe fitting insulation, aircell piping insulation (4 inch O.D.), and miscellaneous thermal insulation in deteriorated condition. Area 63 contains significant quantities of ACM process pipe insulation, pipe fitting insulation, and tank insulation in the upper mezzanine area. The exterior panels of the West Dice Building are asbestos containing transite.

Warehouse - a 33,100 square foot building constructed of concrete and masonry with a timber frame and steel shore roof. Minor quantities of pipe insulation (12 inch O.D.) are present in the Warehouse. The exterior panels of the Warehouse are transite and contain asbestos.

<u>Carbide Building</u> - a concrete and masonry 5,600 square foot building. The building has a pitch roof with a steel frame. Asbestos containing transite roofing material is present on the exterior of the building.

TABLE 2-2
Analysis Summary for Asbestos Bulk Samples Collected in April 1992

PROJECT: Li Tungsten, Glea Cove, NY

| Samp. | Item | | Corresp. | |
|-------|-------|---------------------------------------|----------|-------------|
| No. | No. | Description | Lab. No. | % Asbestos |
| 1 | 1 | Ceiling/wall panels (particle board) | 5894 | 0 |
| 2 | 3 | Floor tile, 12"x12" white (2 layers) | 5895 | 3.4 |
| 3 | 4 | Floor tile, 9"x9" black | 5896 | 4.9 |
| 4 | Not i | | | |
| 5 | 6 | Linoleum flooring | 5897 | 0 |
| 6 | 7 | Ceiling tile (drop-in), 2' x 4' | 5898 | 0 |
| 7 | 8 | Pipe insulation, 5" O.D. | 5899 | 30 |
| 8 | 9 | Pipe insulation, 8" O.D. | 5900 | 25 |
| 9 | 10 | Pipe fitting insulation, 8" | 5901 | 30 |
| 10 | 11 | Pipe insulation, 4" O.D. | 5902 | 50 |
| 11 | 12 | Water tank insulation | 5903 | 50 |
| 12 | Not 1 | used | | |
| 13 | 14 | Pipe insulation, 3" O.D. | 5904 | 20 |
| 14 | 15 | Transite fume hood liner/ducts | 5905 | 30 |
| 15 | 17 | Mineral wool loose fill insulation | 5906 | 0 |
| 16 | 18 | Floor tiles, 6"x6" | 5907 | 11.9 |
| 17 | 20 | Pipe insulation, aircell (debris) | 5908 | 40 |
| 18 | Not 1 | ısed | | |
| 19 | Not 1 | ısed | | |
| 20 | 23 | Floor tiles 12"x12" (misc. Green) | 5909 | 5.4 |
| 21 | Not 1 | ısed | | |
| 22 | 25 | 2 story tank insulation | 5910 | 0 |
| 23 | 26 | Pipe insulation, 14" O.D. and over | 5911 | 35 |
| 24 | 27 | Pipe fitting insulation, 14" and over | 5912 | 30 |
| 25 | 30 | Transite roofing material | 5913 | 30 |
| 26 | 29 | Pipe insulation, 18" O.D. | 5914 | 60 |
| 27 | Not t | ısed | | |
| 28 | Not a | ısed | | |
| 29 | Not a | ısed | | |
| 30 | 32 | Stripping tower insulation (30 inch). | 5915 | 20 (trem.)* |
| 31 | 23 | 12" x 12" floor tiles (misc. green) | 5916 | 7.9 |
| 32 | 34 | Ceiling tiles, 2'x 2' brown particle | 5917 | 0 |
| 33 | 35 | Tank insulation (upper mezzanine) | 5918 | 45 |
| 34 | 33 | Roofing blocks (BenBow Building) | 5919 | 0 |
| 35 | 36 | Pipe insulation, from BenBow Building | 5920 | 40 |
| 36 | 28 | Built-up roofing material | 5921 | 3 |
| 37 | 31 | Duct insulation 20" x 20" (exterior) | 5922 | 0 |
| 38 | 28 | Built-up roofing material | 5923 | 1.1 |
| 39 | 8 | Pipe insulation, 5" O.D. | 5924 | 30 |

Note: *Tremolite

Parcel C

<u>Dickson Warehouse</u> - a concrete and metal panel and steel frame masonry building. The 22,800 square foot building has a metal roof with a steel bow-sting truss. There were no bulk samples collected from this area since no suspect ACM was present. Some existing salvageable furnaces may contain ACM, however, the interior insulation sampling of this equipment is beyond the scope of work for this work plan.

BenBow Building - a concrete and masonry 16,000 square foot building. The building has metal panels with a roof that consists of composite wood planking. There is extensive aircell piping insulation and fittings insulation of various sizes (6-10 inch O.D.) found throughout the building. The pipe insulation is extremely damaged and deteriorated. Bulk sampling was limited due to the building's structural integrity. Prohibited access to this building is recommended for further IRA and RI/FS activities.

2.5.4 Summary

ACM identified include friable and non-friable materials such as the following: various diameter pipe insulation (3 inch - 18 inch O.D.) and fittings; water tank insulation; transite fume hood liner and ducts; aircell piping insulation; stripping tower insulation; floor tiles; transite roofing material; tank insulation; and build-up roofing material. An inventory of each type of ACM is presented in Table 2-3. Total estimated quantities of each ACM are listed in Table 2-4. The quantities given are approximate and are based upon visual estimations.

Materials located within enclosed wall cavities or pipe chases were not included in the scope of this asbestos survey. In addition, interior insulation of boilers and furnaces (Parcel A; Areas 59 and 60; Parcel C; Areas 69 and 70) were not sampled at this time.

2.5.5 Recommendations

Limited asbestos abatement (Phase I) is recommended in areas where IRA and RI/FS field activities will be directly impacted by potential disturbances of ACM (i.e. due to drilling operations, equipment and personnel movements, vibrations, overhead obstructions etc.). Additional abatement (Phase II) may be required if the scope of the proposed IRA's or RI field activities is expanded. Asbestos abatement measures recommended include the following:

Phase I

Restricted Access Areas:

• Install signs in Areas 20, 24, and 63 on Parcel A as shown on Sheet 1 indicating a restricted ACM Area. Significantly damaged friable ACM pipe insulation, boiler insulation, tank insulation, is present in these areas.

Table 2-3
Inventory of Asbestos Containing Materials
Li Tungsten Site
April 1994

| Building/Area Loca- tion | ACM Item No. | Description | Estimated Quantity | Units |
|-------------------------------|--------------|--|-----------------------|-------|
| Office, 1st floor | 1 | СР | 17,050 | S.F. |
| Office, 1st floor | 1 | WP | 136,400 | S.F. |
| Office, 1st floor | 3 | FT 12"x12" (White) | 130 | S.F. |
| Office, 1st floor | 4 | Black 9"x 9" FT | 816 | S.F. |
| Office, 1st floor | 6 | Linoleum Flooring | 1762 | S.F. |
| Office, 1st floor | 7 | Ceiling Tile (2' X 4') | 364 | S.F. |
| Office, 1st floor | 8 | PI 5" O.D. | 74 | L.F. |
| Office/Labs, Sub- Basement | 9 | PI 8" O.D. | 60 | L.F. |
| Office/Labs, Sub- Basement | 10 | PFI 8" | 4 | PFI |
| Office/Labs, Sub- Basement | 11 | PI 4" O.D. | 70 | L.F. |
| Office/Labs, Sub- Basement | 12 | Water Tank Insulation | 20 | S.F. |
| Office/Labs, 1st floor | 14 | PI 3" O.D. | 56 | L.F. |
| Lab, 1st floor | 15 | Transite Fume Hood Liner | 792 | S.F. |
| Lab, 1st floor | 15 | Transite Ducts | 18 | L.F. |
| Office, 2nd floor | 17 | Mineral Wool Loose fill Insulation | 900 | S.F. |
| Office, 1st floor | 18 | FT 6" x 6" | 712 | S.F. |
| Office/Labs, 2nd floor | 34 | CT, 2' x 2' brown particle board | 900 | S.F. |
| 36 | 15 | Transite Ducts | 10 | L.F. |
| 37 | 15 | Transite Roofing | 840 | S.F. |

Table 2-3
Inventory of Asbestos Containing Materials
Li Tungsten Site
April 1994

| , | | <u> </u> | | , |
|--|----|--------------------------------|-----------------------|--|
| | 14 | PI 3" O.D. | 110 | L.F. |
| | 16 | PI 5" O.D. | 50 | L.F. |
| 38 | 7 | CT (drop-in) 2' x | 3869 | S.F. |
| | 14 | PI 3* O.D. | 30 | L.F. |
| 39 | 20 | PI, aircell (debris) | 300 | L.F. |
| 40 | 14 | PI 3" O.D. | 50 | L.F. |
| 41 | 14 | PI 3" O.D. | 62 | L.F. |
| | 15 | Transite Siding | 1800 | S.F. |
| 43 | 9 | PI 8" O.D. | 75 | L.F. |
| 44 | 11 | PI 4" O.D. | 20 | L.F. |
| 45 | 23 | FT 12" x 12" (misc.) | 10,000 (Flo- oded) | S.F. |
| | 8 | 5" PI | 40 | L.F. |
| 48 | 25 | 2 Story Tank Insulation | 700 | S.F. |
| | | PI (4"-12") | | |
| | 21 | Magnesium Block Insulation | 300 | L.F. |
| | 15 | Exterior Transite Panels | 5600 | S.F. |
| 48-49 | 26 | PI, Large Diameter (18") | 358 | L.F. |
| | 27 | PFI , 18" | 8 | PFI |
| 50 | 11 | PI, 4" O.D. | 170 | L.F. |
| | 15 | Transite Piping, Stockpiled | 100 | L.F. |
| | 28 | Built-up Roofing Material | 7950 | S.F. |
| 51 | 11 | PI, 4", Stockpiled | 175 | L.F. |
| 52 | 26 | PI, 14" O.D. and over | 250 | L.F. |
| 54 | 26 | PI, 14" O.D. and over | 52 | L.F. |

Table 2-3
Inventory of Asbestos Containing Materials
Li Tungsten Site
April 1994

| 55 | 26 | PI, 14" O.D. and Over | 55 | L.F. |
|---------|----|---|-------|------|
| 56 | 26 | PI, 14" O.D. and Over | 52 | L.F. |
| 57 | 26 | PI, 14" O.D. and Over | 130 | L.F. |
| 58 | 11 | PI, 4" O.D. | 100 | L.F. |
| | 29 | PI, 18" O.D. | 50 | L.F. |
| | 12 | Water Tank Insulation | 170 | S.F. |
| 61 | 26 | PI, 14" O.D. and Over | 110 | L.F. |
| | 23 | 12" x 12" FT (misc. green) | 400 | S.F. |
| 62 | 15 | Transite Panels | 1700 | S.F. |
| 63 | 25 | Process Piping (Various Sizes) | >500 | L.F. |
| | 25 | 2 story tank insulation | >1000 | S.F. |
| 70 | 36 | Pipe Insulation from BenBow Building | >1000 | L.F. |
| 71 | 32 | Stripping Tower Insulation (30 inch O.D.) | 22 | L.F. |
| 59-63 | 31 | 20" x 20" Duct Insulation (Exterior) | >1000 | S.F. |
| Various | 28 | Built-Up Roofing Material | >1000 | S.F. |

Notes: FT=Floor Tile, PI=Pipe Insulation, PFI=Pipe Fitting Insulation, SF=Square Feet, LF=Linear Feet, FTGS=Fittings, CP=Ceiling Panels, WP=Wall Panels

Table 2-4 **Total Estimated Quantities of Asbestos Containing Materials** Li Tungsten Site April 1994

| ACM Item No. | Description | Quantity |
|--------------|--|---------------------|
| 3 | Floor Tile 12" x 12" (White) | 130 Square Feet |
| 4 | Floor Tile 9" x 9" (Black) | 820 Square Feet |
| 8 | Pipe Insulation 5" O.D. | >160 Linear Feet |
| 9 | Pipe Insulation 8" O.D. | 140 Linear Feet |
| 10 | Pipe Fitting Insulation 8" | 4 PFI |
| 11 | Pipe Insulation 4" O.D. | 540 Linear Feet |
| 12 | Water Tank Insulation | 20 Square Feet |
| 14 | Pipe Insulation 3" O.D. | 310 Linear Feet |
| 15 | Transite Fume Hood Liner/Exterior Siding | >11,000 Square Feet |
| 15A | Transite Piping | 130 Linear Feet |
| 18 | Floor Tiles (6" x 6") | 710 Square Feet |
| 20 | Pipe Insulation, Aircell Debris | 300 Linear Feet |
| 23 | Floor Tiles (12" x 12" (misc.) | >10,400 Square Feet |
| 26 | Pipe Insulation, 14" O.D. and Over | >1,010 Linear Feet |
| 27 | Pipe Fitting Insulation, 14" O.D. | 8 PF1 |
| 28 | Built-Up Roofing Material | >9,000 Square Feet |
| 29 | Pipe Insulation, 18" O.D. | >360 Linear Feet |
| 32 | Stripping Tower Insulation (30" O.D.) | 22 Linear Feet |
| 35 | Tank Insulation (Upper Mezzanine) | >500 Square Feet |
| 36 | Pipe Insulation from BenBow Building | >1000 Linear Feet |

Notes: Quantities are rounded to the nearest 10 units ACM = Asbestos Containing Material O.D. = Outer Diameter

• Install signs in Area 70 on Parcel C as shown on Sheet 2 indicating a restricted ACM area. Greater than 1000 linear feet of significantly damaged ACM piping insulation exists in this building.

Removal of Stockpiled Aircell Debris/Pipe Insulation:

• Collection and removal of miscellaneous stockpiled aircell piping insulation from Area 51, 53, 37, and 39 (See Photographs # 5 and #26).

Removal of Overhead Exterior ACM Pipe and Fitting Insulation:

- Abatement of approximately 358 feet of pipe insulation (14-18 inch O.D.), pipe fitting insulation located between Areas 48-49 (See Photograph #25).
- Abatement of approximately 75 feet pipe insulation (2-5 inch O.D.) and pipe fitting insulation located near the Carbide/Stack Area (See Photograph #17).

Removal of friable interior ACM Pipe and Fitting Insulation

- Abatement of approximately sixty feet (60) of miscellaneous existing pipe insulation (12 inch O.D.) and pipe fitting insulation in Areas 61 and 52.
- Abatement of approximately 120 feet of miscellaneous pipe insulation (3 inch and 5 inch O.D.) in Areas 24 and 37.

Phase II

• If necessary. To be determined during IRA and/or RI/FS.

2.6 AIR MONITORING

A real-time air monitoring program for particulates and radioactivity will be implemented at the perimeter of the exclusion zone during the IRA activities (e.g., debris removal, asbestos removal, and consolidation of the tungsten ore). We propose to include the air monitoring program in the Health and Safety Plan which has not been prepared.

APPENDIX A

May 26, 1994

Malcolm Pirnie, Inc. 2 Corporate Park Drive White Plains, NY 10602

To Joe Guerriero,

Enclosed you will find results for your Li Tungsten project. The bulk samples were analyzed by Polarized Light Microscopy. There were 8 NOB samples and 23 friable samples included. The results for these samples are on the following pages.

If you have any questions please do not hesitate to call. Thank you for using AREA LABS for your asbestos services.

Sincerely,

Asbestos Research and Environmental Associates

Thomas Peter Lab Director

A Division of The Envirovision Group, Inc.

Li Tungsten, Glen Cove, NY Clifford Frey (914) 641-2720 PROJECT: CONTACT:

MPI PROJ. #8001-202 ANALYSIS: Asbestos Content - PLM Method

| Samp. | Item | | |
|--------|--------|--|----------------|
| No. | No. | Description | Category |
| 1 | 4 | Cailing (mall annuls (martials based) | Damilas |
| 1 2 | 1 3 | Ceiling/wall panels (particle board) | Regular NOB |
| 3 | 4 | Floor tile, 12"x12" white (2 layers) Floor tile, 9"x9" black | NOB |
| 4 | Not u | | NOB |
| 5 | 6 | | NOB |
| | 7 | Linoleum flooring | |
| 6 7 | 8 | Ceiling tile (drop-in), 2' x 4' | Regular |
| 8 | 9 | Pipe insulation, 5" O.D. | Regular |
| 9 | | Pipe insulation, 8" O.D. | Regular |
| | 10 | Pipe fitting insulation, 8" | Regular |
| 10 | 11 | Pipe insulation, 4" O.D. | Regular |
| 11 | 12 | Water tank insulation | Regular |
| 12 | Not u | | 7 1 |
| 13 | 14 | Pipe insulation, 3" O.D. | Regular |
| 14 | 15 | Transite fume hood liner/ducts | Regular |
| 15 | 17 | Mineral wool loose fill insulation | Regular |
| 16 | 18 | Floor tiles, 6"x6" | NOB |
| 17 | 20 | Pipe insulation, aircell (debris) | Regular |
| 18 | Not u | | |
| 19 | Not u | | |
| 20 | 23 | Floor tiles 12"x12" (misc. Green) | NOB |
| 21 | Not u | | |
| 22 | 25 | 2 story tank insulation | NOB |
| 23 | 26 | Pipe insulation, 14" O.D. and over | Regular |
| 24 | 27 | Pipe fitting insulation, 14" and over | Regular |
| 25 | 30 | Transite roofing material | Regular |
| 26 | 29 | Pipe insulation, 18" O.D. | Regular |
| 27 | Not u | sed | |
| 28 | Not u | used | |
| 29 | Not u | sed | |
| 30 | 32 | Stripping tower insulation (30 inch). | Regular |
| 31 | 23 | 12" x 12" floor tiles (misc. green) | NOB |
| 32 | 34 | Ceiling tiles, 2'x 2' brown particle | Regular |
| 33 | 35 | Tank insulation (upper mezzanine) | Regular |
| 34 | 33 | Roofing blocks (BenBow Building) | Regular |
| 35 | 36 | Pipe insulation, from BenBow Building | Regular |
| 36 | 28 | Built-up roofing material | NOB |
| 37 | 31 | Duct insulation 20" x 20" (exterior) | Regular |
| 38 | 28 | Built-up roofing material | NOB |
| 39 | 8 | Pipe insulation, 5" O.D. | Regular |

CHAIN OF CUSTODY: The above 31 samples were submitted by Clifford Frey to Asbestos Research & Environmental Associates, Inc. on 5/19/94.

| Received By | r |
|-------------|---|
|-------------|---|

REPORT OF BULK SAMPLE PLM ANALYSIS PAGE 1 OF 8

DATE COLLECTED: Not Stated CLIENT: Malcolm Pirnie

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey Box 751

White Plains, NY 10602

linoleum

DATE RECEIVED: 5/20/94 PROJECT LOCATION: Li Tungsten
Glen Cove, NY

DATE ANALYZED: 5/23/94 & 5/25/94

ANALYZED BY: B.C. & T.P. ARRA PROJECT #: 94153.001

particle

0

0

10

APPROVED SIGNATURE:

MICROSCOPE: Olympus BHT-MT-AS300 #A1

METHOD: EPA-600/M4-82-020, ELAP 198.1

CT LAB#: PH-0756

SAMPLE #: 2 LAB LOG #: B5897 B5894 **B5895** B5896 SAMPLE Item Item Item Item LOCATION: # 3 # 4 # 6

floor

floor

0

95.1

DESCRIPTION: board tile flooring tile 2 layers brown white COLOR: black green METHOD OF ELAP ELAP ELAP ELAP **QUANTIFICATION:** vis.est. NOB NOB NOB APPEARANCE: HOMOGENEOUS: ves yes yes ves FIBROUS/FRIABLE: yes/no no/no no/no no/no ORGANICALLY BOUND: yes no ves ves SAMPLE TREATMENT: dried ash/grd ash/grd ash/grd acid acid acid ASBESTOS CONTENT: & CHRYSOTILE: 0 3.4 4.9 0 **& AMOSITE:** 0 0 0 0 % OTHER: 0 0 TOTAL ASBESTOS %: 4.9 0 3.4 % CELLULOSE: 90 0 trace trace

A Division of The Envirovision Group, Inc.

96.6

0

100

% FIBROUS GLASS:

% OTHER FIBERS:

% NON-FIBROUS:

SAMPLE

REPORT OF BULK SAMPLE PLM ANALYSIS PAGE 2 OF 8

Not Stated CLIENT: Malcolm Pirnie DATE COLLECTED:

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey Box 751

White Plains, NY 10602

DATE RECEIVED: 5/20/94 PROJECT LOCATION: Li Tungsten Glen Cove, NY

5/23/94 & 5/25/94 DATE ANALYZED:

ANALYZED BY: B.C. & T.P. AREA PROJECT #: 94153.001

APPROVED SIGNATURE: **NVLAP ID #: 2054** MICROSCOPE: Olympus BHT-MT-AS300 #A1 N.Y.S.ELAP#: 11143 METHOD: EPA-600/M4-82-020, ELAP 198.1 CT LAB#: PH-0756

| SAMPLE #: | 6 | 7 | 8 | 9 |
|------------|-------|---------------|-------|-------|
| LAB LOG #: | B5898 | B5 899 | B5900 | B5901 |
| SAMPLE | Item | Item | Item | Item |
| LOCATION: | # 7 | # 8 | # 9 | # 10 |

| SAMPLE | ceiling | pipe | pipe | pipe |
|---------------------------|-----------|-----------------|----------|----------|
| DESCRIPTION: | tile | insul. | insul. | fitting |
| | (drop-in) | | | insul. |
| COLOR: | gray | gray | gray | gray |
| METHOD OF | ELAP | ELAP | ELAP | ELAP |
| QUANTIFICATION: | vis.est. | vis.est. | vis.est. | vis.est. |
| APPEARANCE: | | | | |
| HOMOGENEOUS: | yes | yes | yes | yes |
| FIBROUS/FRIABLE: | yes/no | yes /yes | yes/yes | yes/yes |
| ORGANICALLY BOUND: | no | no | no | no |
| SAMPLE TREATMENT: | ground | dried | none | none |
| ASBESTOS CONTENT: | | ' | | |
| % CHRYSOTILE: | 0 | 30 | 0 | 30 |
| % AMOSITE: | 0 | 0 | 25 | 0 |
| † OTHER: | 0 | 0 | 0 | 0 |
| TOTAL ASBESTOS :: | 0 | 30 | 25 | 30 |
| % CELLULOSE: | 30 | 10 | trace | 10 |
| * FIBROUS GLASS: | 50 | 0 | 0 | 0 |
| % OTHER FIBERS: | 0 | 0 | 0 | 0 |
| <pre>% NON-FIBROUS:</pre> | 20 | 60 | 75 | 60 |
| | - | | _ | |

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| REI | PORT OF BUI | K SAMPLE I | PLM ANALYSI | S PAGE 3 OF 8 |
|--|-----------------------|-------------------------|----------------|---|
| DATE COLLECTED: No | ot Stated | CI | | colm Pirnie orporate Park Dr. |
| COLLECTED BY: Clis | ff Frey | | Вох | 751 Plains,NY 10602 |
| DATE RECEIVED: 5/2 | 20/94 PI | OJECT LOCA | ATION: Li | Tungsten en Cove, NY |
| DATE ANALYZED: 5/2 ANALYZED BY: B.C. | 23/94 & 5/2 & T.P. | 5/94 ARRA/PROJI | | 153.001 |
| APPROVED SIGNATURE: MICROSCOPE: Olympu: METHOD: EPA-600/M4 | BHT-MT-AS | | N.Y.S. | ID #: 2054 ELAP#: 11143 B#: PH-0756 |
| SAMPLE #: | 10 | 11 | 13 | 14 |
| LAB LOG #: | B5902 | B5 903 | B5904 | B5905 |
| SAMPLE | Item | Item | Item | Item |
| LOCATION: | # 11 | # 12 | # 14 | # 15 |
| SAMPLE | nina | **** | | transite |
| DESCRIPTION: | pipe insul. | water tank insul. | pipe insul. | fume hood liner/ducts |
| COLOR: | gray | gray | gray | gray |
| METHOD OF | ELAP | ELAP | ELAP | ELAP |
| QUANTIFICATION: | vis.est. | vis.est. | vis.est. | vis.est. |
| APPEARANCE: | | | | |
| HOMOGENEOUS: | yes | yes | yes | yes |
| FIBROUS/FRIABLE: | yes/yes | ye s/yes | yes/yes | yes/no |
| ORGANICALLY BOUND: | no | no | no | no |
| SAMPLE TREATMENT: | none | none | none | ground |
| ASBESTOS CONTENT: | · | · | | |
| & CHRYSOTILE: | 50 | 50 | 20 | 30 |

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AMOSITE:

CELLULOSE:

TOTAL ASBESTOS %:

FIBROUS GLASS:

% OTHER FIBERS:

% NON-FIBROUS:

OTHER:

trace

REPORT OF BULK SAMPLE PLM ANALYSIS PAGE 4 OF 8

DATE COLLECTED: Not Stated CLIENT: Malcolm Pirnie

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey Box 751

White Plains, NY 10602

DATE RECEIVED: 5/20/94 PROJECT LOCATION: Li Tungsten

Glen Cove, NY

DATE ANALYZED: 5/23/94 & 5/25/94

ANALYZED BY: B.C. & T.P. AREA PROJECT #: 94153.001

APPROVED SIGNATURE: NVLAP ID #: 2054
MICROSCOPE: Olympus BHT-MT-AS300 #A1
METHOD: EPA-600/M4-82-020, ELAP 198.1
CT LAB#: PH-0756

| SAMPLE #: | 15 | 16 | 17 | 20 | |
|---------------------|-----------|---------------|--------------|-----------|---------------|
| LAB LOG #: | B5906 | B5 907 | B5908 | B5909 | |
| SAMPLE LOCATION: | Item # 17 | Item # 18 | Item # 20 | Item # 23 | · |

| SAMPLE DESCRIPTION: | mineral wool fill insul. | floor tile | pipe insul. aircell | floor tile | |
|---------------------------|--------------------------------|---------------|---------------------------|---------------|--|
| COLOR: | white | gray | gray | green | |
| METHOD OF QUANTIFICATION: | ELAP vis.est. | ELAP NOB | ELAP vis.est. | ELAP NOB | |

| HOMOGENEOUS: FIBROUS/FRIABLE: | yes yes/yes | yes yes/no | yes yes/no | yes yes/no |
|----------------------------------|----------------|-----------------|---------------|-----------------|
| ORGANICALLY BOUND: | no | yes | no | yes |
| SAMPLE TREATMENT: | none | ash/grd acid | none | ash/grd acid |
| ASBESTOS CONTENT: | | | | |
| <pre>% CHRYSOTILE:</pre> | 0 | 11.9 | 40 | 5.4 |
| AMOSITE: | 0 | 0 | 0 | 0 |
| * OTHER: | 0 | 0 | 0 | 0 |
| TOTAL ASBESTOS :: | 0 | 11.9 | 40 | 5.4 |
| % CELLULOSE: | trace | trace | 50 | trace |
| <pre># FIBROUS GLASS:</pre> | 90 | 0 | 0 | 0 |

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88.1

0

10

% OTHER FIBERS:

% NON-FIBROUS:

ADDEADANCE.

94.6

A.R.E.A. Labs

REPORT OF BULK SAMPLE PLM ANALYSIS PAGE 5 OF 8

DATE COLLECTED: Not Stated

CLIENT: Malcolm Pirnie

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey

Box 751

White Plains, NY 10602

DATE RECEIVED: 5/20/94

PROJECT LOCATION:

Li Tungsten

Glen Cove, NY

DATE ANALYZED: 5/23/94 & 5/25/94

ANALYZED BY: B.C. & T.P.

AREA PROJECT #:

94153.001

APPROVED SIGNATURE: The MICROSCOPE: Olympus BHT-MT-AS300 #A1

NVLAP ID #: 2054 N.Y.S.ELAP#: 11143

METHOD: EPA-600/M4-82-020, ELAP 198.1

CT LAB#: PH-0756

| SAMPLE #: | 22 | 23 | 24 | 25 | |
|---------------------|--------------|-----------|-----------|-----------|-----|
| LAB LOG #: | B5910 | B5911 | B5912 | B5913 | |
| SAMPLE LOCATION: | Item # 25 | Item # 26 | Item # 27 | Item # 30 | -,, |

| SAMPLE | 2 story | pipe | pipe | transite | • |
|--|---------------------------------------|----------------------------------|------------------------|---|-------------|
| DESCRIPTION: | tank | insul. | fitting | roofing | |
| | insul. | | insul. | material | |
| COLOR: | gray | white | white | gray | |
| METHOD OF | ELAP | ELAP | ELAP | ELAP | _ |
| QUANTIFICATION: | vis.est. | | | vis.est. | |
| | | | | | |
| APPEARANCE: | | | | | _ |
| HOMOGENEOUS: | yes | yes | yes | yes | |
| FIBROUS/FRIABLE: | yes/yes | yes/yes | yes/yes | yes/no | ٠ |
| <u> </u> | - /- | | | - · · · · · · · · · · · · · · · · · · · | _ |
| ORGANICALLY BOUND: | no | no | no | no | _ |
| SAMPLE TREATMENT: | none | none | none | ground | _ |
| | • | | | • | |
| | | | | | _ |
| ASBESTOS CONTENT: | · · · · · · · · · · · · · · · · · · · | | | | _ |
| ASBESTOS CONTENT: CHRYSOTILE: | 0 | 10 | 10 | 30 | - |
| · · · · · · · · · · · · · · · · · · · | 0 | | | 30 | _ |
| % CHRYSOTILE: | - | 10 25 0 | 10 20 0 | | |
| % CHRYSOTILE: % AMOSITE: | Ó | 25 | 20 | 0 | |
| % CHRYSOTILE: % AMOSITE: | Ó | 25 | 20 | 0 | _ |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %:</pre> | 0 | 25 0 35 | 20 0 30 | 30 | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %: % CELLULOSE:</pre> | 0 0 trace | 25 0 35 trace | 20 0 30 trace | 0 0 30 trace | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %: % CELLULOSE: % FIBROUS GLASS:</pre> | 0 | 25 0 35 | 20 0 30 trace | 0 0 30 trace 0 | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %: % CELLULOSE: % FIBROUS GLASS: % OTHER FIBERS:</pre> | 0 0 trace | 25 0 35 trace 0 0 | 20 0 30 trace | 0 0 30 trace | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %: % CELLULOSE: % FIBROUS GLASS:</pre> | 0 0 0 trace 60 | 25 0 35 trace 0 | 20 0 30 trace | 0 0 30 trace 0 | - |

A.R.E.A. Lubs

REPORT OF BULK SAMPLE PLM ANALYSIS PAGE 6 OF 8

DATE COLLECTED: Not Stated CLIENT: Malcolm Pirnie

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey Box 751

White Plains, NY 10602

DATE RECEIVED: 5/20/94 PROJECT LOCATION: Li Tungsten Glen Cove, NY

DATE ANALYZED: 5/23/94 & 5/25/94

ANALYZED BY: B.C. & T.P. __ AREA PROJECT #: 94153.001

APPROVED SIGNATURE:

MICROSCOPE: Olympus BHT-MT-AS300 #A1

METHOD: EPA-600/M4-82-020, ELAP 198.1

NVLAP ID #: 2054

N.Y.S.ELAP#: 11143

CT LAB#: PH-0756

| SAMPLE #: | 26 | 30 | 31 | 32 | |
|---------------------|--------------|---------------|--------------|-----------|--|
| LAB LOG #: | B5914 | B5 915 | B5916 | B5917 | |
| SAMPLE LOCATION: | Item # 29 | Item # 32 | Item # 23 | Item # 34 | |

| SAMPLE DESCRIPTION: | pipe insul. | stripping tower insul. | floor tile | ceiling tile | |
|---|------------------|------------------------------|---------------|------------------|-------------|
| COLOR: | gray | wh./blk | green | _brown | |
| METHOD OF QUANTIFICATION: | ELAP vis.est. | ELAP vis.est. | ELAP NOB | ELAP vis.est. | , |
| APPEARANCE: HOMOGENEOUS: FIBROUS/FRIABLE: | yes yes/yes | no yes /yes | yes yes/no | yes yes/yes | |

| ORGANICALLY BOUND: | no | no | yes | no | |
|--------------------|-------|----------|-----------------|------|--|
| SAMPLE TREATMENT: | dried | none | ash/grd acid | none | |
| ASBESTOS CONTENT: | | | | | |
| & CHRYSOTILE: | 60 | 0 | 7.9 | 0 | |
| % AMOSITE: | 0 | 0 | 0 | 0 | |
| % OTHER: | 0 | 20 trem. | 0 | 0 | |
| TOTAL ASBESTOS %: | 60 | 20 trem. | 7.9 | 0 | |
| % CELLULOSE: | 10 | 50 | trace | 90 | |
| * FIBROUS GLASS: | 0 | 0 | 0 | 0 | |
| % OTHER FIBERS: | 0 | 0 | 0 | 0 | |
| % NON-FIBROUS: | 30 | 30 | 92.1 | 10 | |

COMMENT: Sample 30 - Heated properties of tremolite

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REPORT OF BULK SAMPLE PLM ANALYSIS PAGE 7 OF 8

DATE COLLECTED: Not Stated

CLIENT: Malcolm Pirnie

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey

Box 751

White Plains, NY 10602

DATE RECEIVED: 5/20/94

PROJECT LOCATION: Li Tungsten

Glen Cove, NY

DATE ANALYZED: 5/23/94 & 5/25/94

ANALYZED BY: B.C. & T.P.

AREA PROJECT #: 94153.001

MICROSCOPE: Olympus BHT-MT-AS300 #A1
METHOD: EPA-600/M4-82-020, ELAP 198.1

NVLAP ID #: 2054 N.Y.S.ELAP#: 11143 CT LAB#: PH-0756

| 33 | 34 | 35 | 36 |
|-------|---------------|------------------------|-----------------------------------|
| B5918 | B59 19 | B5920 | B5921 |
| Item | Item | Item | Item # 28 |
| | B5918 | B5918 B5919 Item Item | B5918 B5919 B5920 Item Item Item |

| SAMPLE | tank | ro ofing | pipe | built-up | |
|--|-----------------------------|--------------------------|------------------------|--------------------------------|-------------|
| DESCRIPTION: | insul. | blocks | insul. | roofing | |
| | | | | material | |
| COLOR: | white | brown | gray | black | |
| METHOD OF | ELAP | ELAP | ELAP | ELAP | |
| QUANTIFICATION: | vis.est. | vis.est. | vis.est. | NOB | |
| I DDBI DINGB. | | | | | |
| APPEARANCE: | | | | | |
| HOMOGENEOUS: | yes | yes | yes | yes | |
| FIBROUS/FRIABLE: | yes/yes | no/yes | yes/yes | yes/no | |
| ORGANICALLY BOUND: | no | по | no | yes | _ |
| SAMPLE TREATMENT: | none | none | dried | ash/grd | |
| | | | | | |
| | | | | acid | |
| ASBESTOS CONTENT: | | | | acid | |
| ASBESTOS CONTENT: | 15 | 0 | 10 | acid 3 | |
| | 15 30 | 0 | 10 30 | | |
| & CHRYSOTILE: | | • | | 3 | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER:</pre> | 30 0 | 0 | 30 0 | 3 0 0 | |
| <pre>% CHRYSOTILE: % AMOSITE:</pre> | 30 | 0 | 30 | 3 | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER:</pre> | 30 0 | 0 | 30 0 40 | 3 0 0 | |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %:</pre> | 30 0 45 | 0 | 30 0 40 | 3 0 0 | |
| <pre>\$ CHRYSOTILE: \$ AMOSITE: \$ OTHER: TOTAL ASBESTOS \$: \$ CELLULOSE: \$ FIBROUS GLASS:</pre> | 30 0 45 trace | 0 0 0 10 bundle | 30 0 40 trace | 3 0 0 3 trace | == |
| <pre>% CHRYSOTILE: % AMOSITE: % OTHER: TOTAL ASBESTOS %: % CELLULOSE:</pre> | 30 0 45 trace 0 | 0 0 0 10 bundle | 30 0 40 trace | 3 0 0 3 trace 0 | - |

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| REPORT | OF | BULK | SAMPLE | PLM | ANALYSIS | PAGE | 8 | OF | 8 |
|--------|-----|------|--------|-----|----------|-------|---|----|---|
| | O.L | | | | MANTOTO | 111-4 | • | | - |

DATE COLLECTED: Not Stated CLIENT: Malcolm Pirnie

2 Corporate Park Dr.

COLLECTED BY: Cliff Frey Box 751

White Plains, NY 10602

DATE RECEIVED: 5/20/94 PROJECT LOCATION: Li Tungsten Glen Cove, NY

DATE ANALYZED: 5/23/94 & 5/25/94

ANALYZED BY: B.C. & T.P. AREA PROJECT #: 94153.001

APPROVED SIGNATURE:

MICROSCOPE: Olympus BHT-MT-AS300 #A1

METHOD: EPA-600/M4-82-020, ELAP 198.1

NVLAP ID #: 2054

N.Y.S.ELAP#: 11143

CT LAB#: PH-0756

| SAMPLE #: | 37 | 38 | 39 | |
|------------|-------|-------------|------------|--|
| LAB LOG #: | B5922 | B5923 | B5924 | |
| SAMPLE | Item | Item | Item | |
| LOCATION: | # 31 | # 28 | <i>#</i> 8 | |

| SAMPLE | duct | bu ilt-up | pipe |
|-----------------------------|----------|------------------|----------|
| DESCRIPTION: | insul. | ro ofing | insul. |
| | | mat erial | |
| COLOR: | white | black | gray |
| METHOD OF | ELAP | ELAP | ELAP |
| QUANTIFICATION: | vis.est. | NOB | vis.est. |
| APPEARANCE: | | | |
| HOMOGENEOUS: | yes | yes | yes |
| FIBROUS/FRIABLE: | yes/yes | no/no | yes/yes |
| ORGANICALLY BOUND: | no | ves | no |
| SAMPLE TREATMENT: | ground | ash/grd acid | none |
| ASBESTOS CONTENT: | | | |
| <pre>\$ CHRYSOTILE:</pre> | 0 | 1.1 | 30 |
| % AMOSITE: | 0 | 0 | 0 |
| % OTHER: | 0 | 0 | 0 |
| TOTAL ASBESTOS :: | 0 | 1.1 | 30 |
| % CELLULOSE: | trace | trace | 40 |
| <pre>% FIBROUS GLASS:</pre> | 40 | trace | 0 |
| % OTHER FIBERS: | 0 | 0 | 0 |
| % NON-FIBROUS: | 60 | 98. 9 | 30 |
| | | | |

.A.R.E.A. Labs

LABORATORY STATEMENTS:

- Non-Friable Organically Bound Materials (NOBs), such as floor tiles roof shingles, tars, and mastic may contain fibers below the resolution of a light microscope. Therefore New York State Department of Health, ELAP program, states:
 - "Polarized Light Microscopy (PLM) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy, TEM, is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing."
- Negative NOBs will be sent to be analyzed by TEM at the clients request.
- Non-Friable Organically Bound Materials (NOBs), can be reported as asbestos containing materials if asbestos is detected by PLM ELAP NOB method. This method requires grinding, ashing, acid washing, and filtering the samples to expose inorganic material, such as asbestos fibers. If asbestos is present then a gravimetric percentage is calculated for asbestos vs. non-asbestos components. If no asbestos is detected then the report will state NAD, No Asbestos Detected. Samples that are ashed down to less than 1% residue may be considered non-asbestos containing.
- Layered Samples Results for layered samples are reported as a composite of the entire sample. If densities of each layer are similar than they will be calculated volumetrically. If layers differ in density, the composite result will be calculated gravimetrically.
- Floor tiles and mastics will be analyzed separately and a percentage of asbestos will be given for each.
- All results on the reports are applicable to those items tested.
- AREA Labs shall not be responsible for sample collection methodologies if the samples are submitted or collected by the client.
- All reports are the confidential property of our clients and the information contained within the reports may not be published or reproduced without A.R.E.A.'s or the clients consent.
- This report must not be used by the client to claim product endorseement by NVLAP or any agency of the U.S. government.

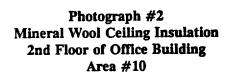
APPENDIX B

PHOTOGRAPHIC INDEX

| Photograph #1 Photograph #2 | Ceiling/Wall Panels (Particle Board), Area #6 Mineral Wool Ceiling Insulation, Area #10 |
|--------------------------------|---|
| Photograph #3 | Ceiling Tiles (2'x4')/Flooring, Area #7 |
| Photograph #4 | Transite Panels, Area #27 |
| Photograph #5 | 3" O.D. Pipe Insulation, Area #37 |
| Photograph #6 | 20" x 20" Exterior Duct Insulation, Near Stack Area |
| ~ - | Various Transite Roofing/Piping, Roof of Area #39 |
| Photograph #11,12 | Overhead View of Existing Exterior Piping, Near BenBow Building |
| Photograph #13 | Miscellaneous Overhead Piping/Flooded Warehouse, Area #52 |
| Photograph #14 | Tank Insulation (Upper Mezzanine), Area #63 |
| Photograph #15 | 12-Furnance Boxes, Carbide Building, Area #65 |
| Photograph #16 | Typical Roofing, Near Stack Area |
| Photograph #17 | Overhead Piping and Insulation, Near Stack Area/Carbide Building |
| Photograph #18 | Parcel "B", No Survey Conducted |
| Photograph #19 | Miscellaneous Furnaces, Dickson Warehouse, Area #69 |
| Photograph #20 | Miscellaneous Furnaces/Piping, Deteriorated Roofing, BenBow |
| Photograph #21 | Stripping Tower Insulation, 30 Inch, Area #70, Parcel "C" |
| Photograph #22 | Exterior 5" O.D. Magnesium Block Insulation, Area #71 |
| Photograph #23 | Roof of BenBow Building, Area #70 |
| Photograph #24 | Overhead Piping Insulation/Transite Fume Hood, Area #31 |
| Photograph #25 | Large Diameter (14") Pipe Insulation and Mudded Fittings, Area #45 |
| Photograph #26 | Aircell Piping Debris, Area #39 |
| Photograph #27 | Canopy Collapse, Building M and N |
| Photograph #28 | Standing Water, Building L |
| Photograph #29 | Collapsed Roof, Building L |
| Photograph #30 | Wash-Out at Bulkhead, Glen Cove Creek |
| Photograph #31 | Stockpiled Drums with Tungsten Ore, South of Building B |
| Photograph #32 | Drum Debris, South of Building A |
| Photograph #33 | Deteriorated Drums/Crates with Tungsten Ore, W/Perimeter P.L. |
| Photograph #34 | Overhead Piping to be Removed, Outside of Building R/Q |
| Photograph #35 | Stockpiled Drums/Crates with Tungsten Ore, Near Stack Area |
| Photograph #36 | Tungsten Ore/Carbide Powder, West-Side of Building Q |
| Photograph #37 | Tungsten Ore, West-Side of Building E |
| Photograph #38 | Deteriorated Crates Containing Slag, Near Carbide Building |
| Photograph #39 | C & D Debris, Outside Building H |
| Photograph #40 | Scattered Debris, Alley Between Building F & G |



Photograph #1 Ceiling/Wall Panels (particle board) Area #6







Photograph #3
Ceiling Tiles (2'x 4')/Flooring
Hallway, Area #7

Photograph #4 Transite Panels Area #27

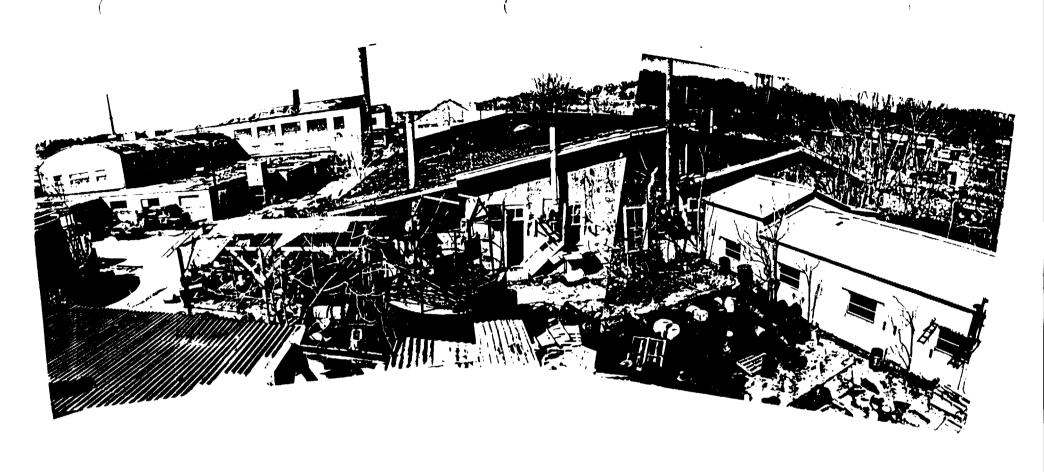




Photograph #5 3" O.D. Pipe Insulation Area #37



Photograph #6 20"x 20" Exterior Duct Insulation Near Stack Area



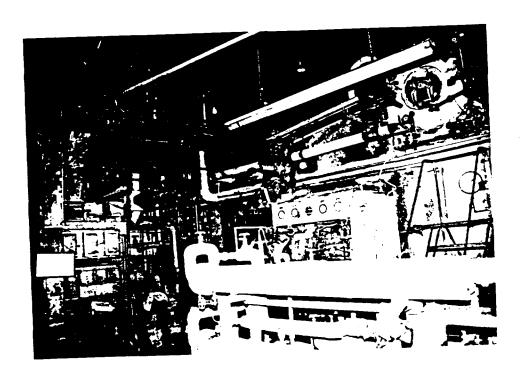
Photograph #7, 8, 9, 10 Various Transite Roofing/Piping Roof of Area #39



Photograph #11, 12 Overhead View of Existing Exterior Piping Near BenBow Building



Photograph #13
Miscellaneous Overhead Piping
Flooded Warehouse
Area #52



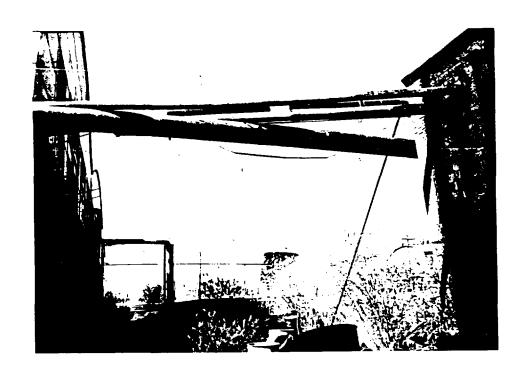
Photograph #14
Tank Insulation (Upper Mezzanine)
Various Piping Insulation and Fittings
Area #63



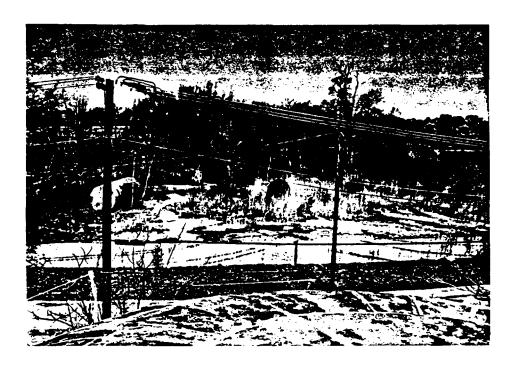
Photograph #15
12-Furnace Boxes (Not Sampled)
Carbide Building
Area #65



Photograph #16 Typical Roofing Near Stack Area



Photograph #17 Overhead Piping and Insulation Near Stack Area/Carbide Building



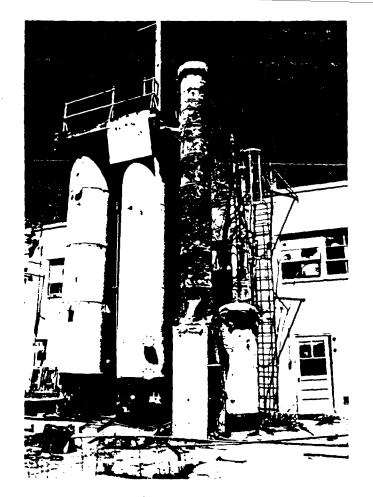
Photograph #18
Parcel "B"
No Survey Conducted



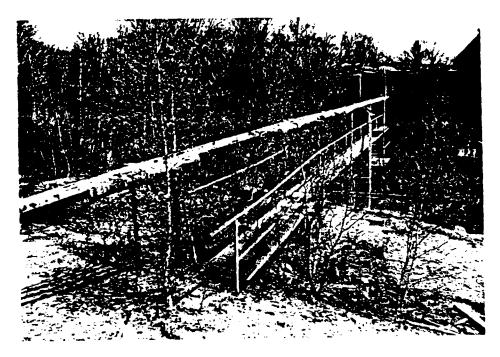
Photograph #19
Miscellaneous Furnaces (Not Sampled)
Dickson Warehouse
Area #69, Parcel "C"



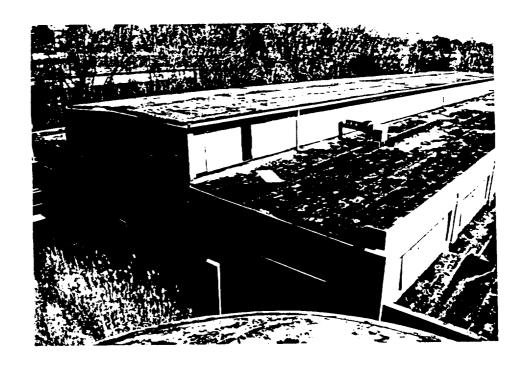
Photograph #20
Miscellaneous Furnaces (Not Sampled)
Overhead Piping and Insulation
Deteriorated Roofing Blocks (On Floor)



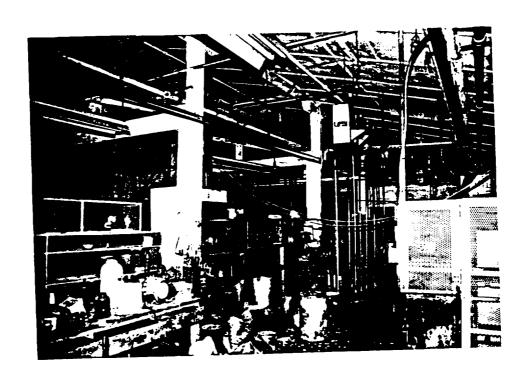
Photograph #21 Stripping Tower Insulation, 30 Inch Area #70, Parcel "C"



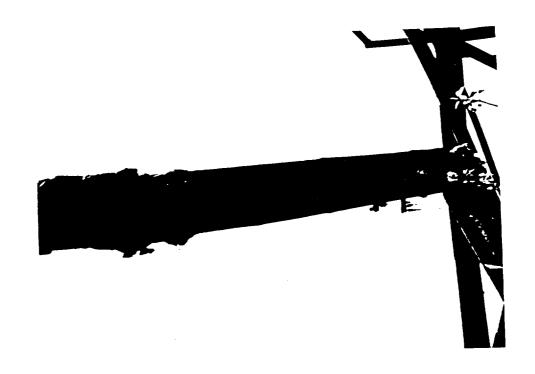
Photograph #22
Exterior 5" O.D. Magnesium Block Insulation
Area #71



Photograph #23 Roof of BenBow Building Area #70



Photograph #24
Overhead Piping Insulation/Transite Fume Hood
Laboratory Building
Area #31



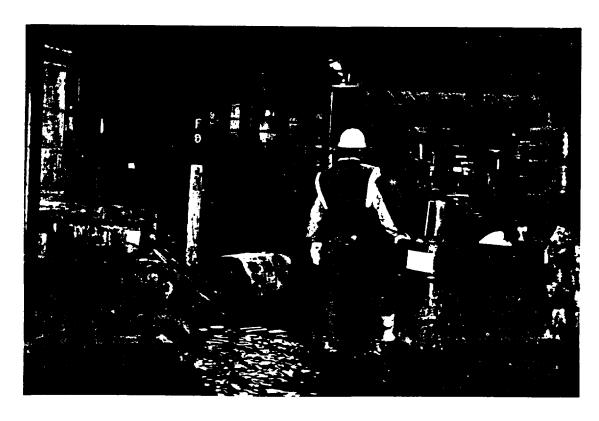
Photograph #25
Large Diameter (14") Piping Insulation and Mudded Fittings
Near Area #45



Photograph #26 Aircell Piping Debris Area #39



Photograph #27 Canopy Collapse Buildings M & N



Photograph #28 Standing Water Building L



Photograph #29 Collapsed Roof Building L



Photograph #30 Wash-Out at Bulkhead Glen Cove Creek



Photograph #31 Stockpiled Drums with Tungsten Ore South of Building B



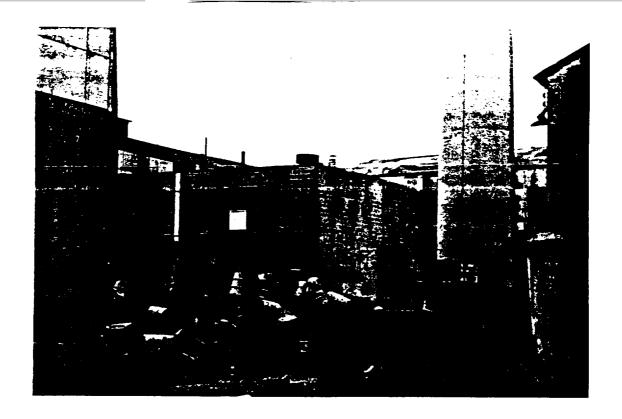
Photograph #32 Drum Debris South of Building A



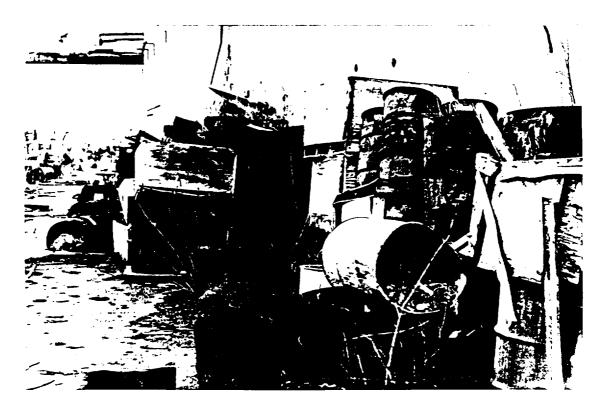
Photograph #33
Deteriorated Drums/Crates with Tungsten Ore
West Perimeter Property Line/Garvies Point Road



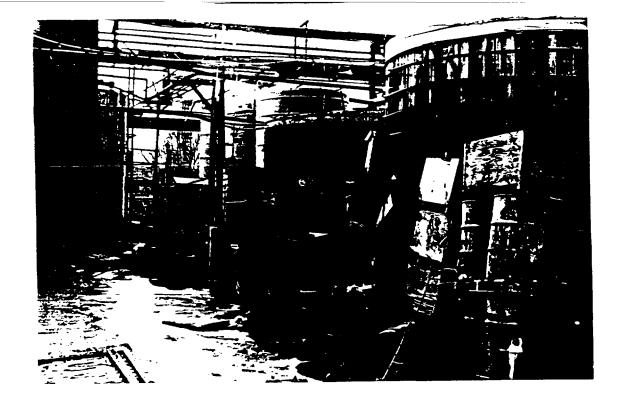
Photograph #34
Overhead Piping to be Removed
Outside of Building R/Q



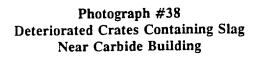
Photograph #35
Stockpiled Drums/Crates with Tungsten Ore
Near Stack Area



Photograph #36 Tungsten Ore/Carbide Powder West-Side of Building Q



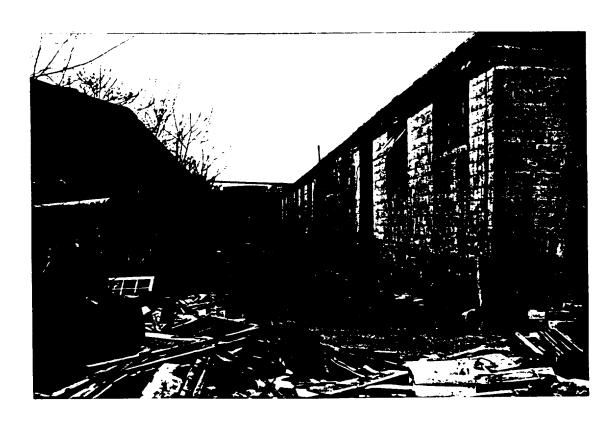
Photograph #37 Tungsten Ore West-Side of Building E







Photograph #39 C & D Debris Outside of Building H



Photograph #40 Scattered Debris Alley Between Building F & G

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DOC ID # <u>36747</u>

DOC TITLE/SUBJECT:

ASBESTOS SURVEY
PARCEL A
SHEET 1

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DOC TITLE/SUBJECT:

ASBESTOS SURVEY
PARCEL B, C, C'
SHEET 2

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